

THE IN-RIDE PROPOSAL

A MODERN, SUSTAINABLE POLICY TO FUND TRANSPORTATION INFRASTRUCTURE

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Executive Summary

Indiana's transportation infrastructure is barely adequate and is deteriorating. The total funding needed to address short-term highway needs has been estimated at \$3.8 billion. Additionally, \$23.2 billion is required to meet the goals of the state's long-range transportation plan by 2030. Unfortunately, the end of the Major Moves program, declining Fuel Tax receipts, and the looming budgetary problems of the federal Highway Trust Fund imperil the revenue sources to maintain and modernize Indiana's system. This proposed Indiana Road Infrastructure and Driver Enhancement (IN-RIDE) program is a solution to these problems.

The IN-RIDE is a road user fee for each mile traveled by a vehicle that is equal to the damage caused by the vehicle to the infrastructure plus costs to invest in future needs. Utilizing a public-private partnership (P3) agreement to administer the program, the IN-RIDE allows individuals to choose their own pay-as-you-drive plan. Except for the third option, Indiana motorists receive credits for their Fuel Tax contributions at the pump:

1. **The IN-RIDE Smart Plan** – reports only miles traveled on public, non-tolled Indiana roads using global positioning system (GPS) tracking technology;
2. **The IN-RIDE Convenient Plan** – records all miles traveled without the use of GPS location services for residents who wish to keep their location private; and
3. **The IN-RIDE Flat Rate Plan** – charges motorists a flat rate equal to 30,000 to 50,000 miles per year depending on vehicle class, providing an alternative for those who do not want to have mileage reporting technology in their automobiles.

The IN-RIDE rate schedule would depend on the goals of the policy:

1. **Replacement-level Rates** – To simply replace the fuel tax for Indiana motorists, the required rates are 1.5 cents per mile for passenger vehicles and single-unit trucks and 2.5 cents per mile for multiple unit trucks and buses.
2. **Improvement Rates** – To maintain and operate the state transportation system at acceptable levels, the required rates are 2.5 cents per mile for passenger vehicles and single-unit trucks and 3.5 cents per mile for multiple unit trucks and buses.
3. **Full Capacity Rates** – To bring Indiana's system up to par *and* invest in a world-class transportation network for the future, the required rates are 3.5 cents per mile for passenger vehicles and single unit trucks and 4.5 cents per mile for multiple unit trucks and buses.

Under the “full capacity” rates, the estimated bill to an Indiana household will be \$71 per month on average (including fuel tax contributions at the pump, which will be credited on the IN-RIDE invoice). This is comparatively lower than typical electricity, natural gas, cable (with Internet) and cell phone bills. At just \$71 per month per household, the state is conservatively expected to generate an additional \$1.46 billion in annual funds. Five-year programs supported by this additional funding would create more than 100,000 jobs over 25 years. Full capacity funding also allow the state to fund the equivalent of two Major Moves initiatives over five years, or twice the projects in half the time.

The benefits of the Indiana Road Infrastructure and Driver Enhancement program are substantial. The IN-RIDE is a fiscally-responsible policy that maintains an adequate, predictable, and sustainable revenue stream every year. By making those who *actually* drive on the roads pay for their usage, the IN-RIDE also promotes taxpayer fairness. Moreover, in promoting the stability of infrastructure funds, the IN-RIDE encourages businesses to locate in Indiana because they can be certain that their products will be efficiently and predictably delivered to the market.

Indiana has reached a crossroads. The state can continue down the path of unsustainable funding and low-quality infrastructure, or it can be a global leader in smart, comprehensive infrastructure investment policies that grow the economy. The IN-RIDE allows the state to choose the second path of transit modernization, congestion alleviation, safety improvements, and “high-road” economic development. The Indiana Road Infrastructure and Driver Enhancement program should be implemented.

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Introduction: At a Crossroads

Today, the quality of Indiana's transportation infrastructure is barely adequate. Many roads are in poor to mediocre condition and one-fifth of the state's bridge inventory faces structural problems, costing Hoosiers \$2.1 billion each year in extra vehicle repairs and operating costs. A total of \$3.8 billion is needed to make short-term repairs to bring the state's road infrastructure up to par. Meanwhile, the Indiana population is expected to grow while the state economy continues to improve, increasing the number of drivers on Indiana's public roads. An estimated \$23.2 billion is required to meet the goals of the state's long-range transportation plan by 2030.

Unfortunately, resources that pay for operating, maintaining, and improving the state's transportation network are stagnant and will decline precipitously over the next decade. Fifteen years into this new millennium, Indiana's transportation system is still primarily supported by Fuel Tax revenues, vehicle registrations and license fees, and reimbursements from the federal government. These revenue streams are becoming more and more outdated: Fuel Tax revenues are projected to experience declines at all levels of government over the next decade as Corporate Average Fuel Economy (CAFE) standards are raised and alternative fuel vehicles become more commonplace.

Indiana is at a crossroads. The state's transportation system must be modernized to alleviate congestion, reduce motorist costs and injuries, and provide a world-class infrastructure that attracts businesses to locate in Indiana. A significant overhaul of the state's transportation network, however, also requires the funding stream to be revamped using current technologies. Thus, in response to bleak projections for the future, Indiana must choose a different path by implementing a road user fee that provides reliable and sustainable funding for the future.



This joint Midwest Economic Policy Institute (MEPI) and Indiana, Illinois, Iowa Foundation for Fair Contracting (IIIFFC) Policy Brief proposes the Indiana Road Infrastructure and Driver Enhancement (the IN-RIDE) program, a comprehensive public policy that modernizes the state's transportation system, promotes fiscal responsibility, and grows the economy. First, the Policy Brief describes the current transportation system in Indiana and discusses how current revenue streams are becoming more and more insufficient to meet future needs. Then, the "Oregon model" is evaluated as an example of a current road user fee. The proposed IN-RIDE policy is subsequently proposed and presented in great detail. Indiana's system is contrasted with Oregon's system in the following section before the report recaps key findings. Answers to five questions that may surface about the policy appear in the Appendix.

TURNING ONTO THE SMARTER PATH

Indiana's Extensive Transportation System and Needs Assessment

Indiana is the “Crossroads of America.” The state’s 95,500 miles of highway, roads, and streets facilitate over 75 billion vehicle miles traveled by Hoosiers, visitors, and truckers. State-controlled roads account for 10 percent of the total road miles throughout the state (about 11,200 road miles) but service 54 percent of Indiana’s vehicle miles traveled each year. Additionally, Amtrak provides rides to approximately 125,000 intercity passengers and the Northern Indiana Commuter Transportation District (NICTD) transported over 4.3 million rides to workers, families, and tourists. The state also has an inventory of 18,483 bridges (ASCE, 2010).

There are 112 public-use airports and 41 freight railroads in Indiana (Ellspermann & Langham et al., 2014). Airports include 69 that the Indiana Department of Transportation (INDOT) has identified as being of “statewide importance,” which are able to move goods and services anywhere in the United States in under five hours. Indiana’s vast rail network includes five Class I freight carriers in America that operate 4,075 miles of railroad tracks. About 65 percent of rail freight traffic is pass-thru traffic (INDOT, 2013). Between one-tenth and one-fifth of all primary metal products transported by rail in America originates or terminates in Indiana (AAR, 2014). The state’s large road network, aviation capacity, rail system, and 400 miles of navigable waterways combine to allow private firms to efficiently export their products to major markets across the world (Ellspermann & Langham et al., 2014).

Indiana’s transportation system, however, is in need of repair and investment for the future. Although the majority of the state’s public infrastructure was built over half a century ago, public use has risen substantially as the state’s population and economy have grown. With increasing consumer demand, outdated and insufficient infrastructure results in both economic inefficiency and public safety concerns.

To address these needs, former Governor Mitch Daniels launched the Major Moves plan in 2005. By the end of 2015, the program will have constructed over 80 new roadways, 65 new or restructured interchanges, and over 400 miles of new roadway. Major Moves also will have resurfaced 49 percent of the state’s highway inventory and rehabilitated or replaced 19.5 percent of the state’s bridge inventory (INDOT, 2014a). The success of the program demonstrates the positive outcomes of a long-term infrastructure strategy in improving traffic capacity, worker-business connectivity, and the Indiana economy.

As the Major Moves program comes to an end, however, Indiana’s horizontal infrastructure network still has both short-term and long-term needs. While Indiana “ranks first in rural interstate conditions” and generally meets annual “International Roughness Index” (IRI) road standards, half of all county-owned roads remain unsatisfactory and potholes plague too many roads owned by cash-strapped city governments. In total, \$3.8 billion (in 2014 dollars) is needed to address short-term road needs. In addition, 22.5 percent of all bridges in Indiana were considered either “structurally deficient” or “functionally obsolete” in 2010 (ASCE, 2010). While Major Moves has undoubtedly improved this estimate, many bridges (especially those operated by county governments) remain in need of repair.

Maintaining the existing system is important, but the state also needs a sustainable plan to increase capacity and invest in modern infrastructure. The combined funding required to meet road

maintenance *and* expansion goals in INDOT's long-range transportation plan is estimated at \$23.2 billion (in 2014 dollars) from 2016 through 2030. Finally, the cost of driving on poor roads in Indiana is currently \$2.1 billion each year in extra vehicle repairs and operating costs, or \$391 per motorist (ASCE, 2010). Without continuing to address the system's funding needs on the front end, these back-end personal costs will only increase.

Additionally, the public transit system faces similar capital demands that must be addressed. A report from the URS Corporation (commissioned by INDOT in legislation signed by Governor Daniels) found that urban bus and rural transit systems in Indiana "are undersized and not meeting potential demand" and that current transportation funding is insufficient to accommodate investments to meet the demand for public transit (URS, 2008). As a result, INDOT's long-term plan from 2013 through 2035 now includes capital investments in northwest Indiana, local bus route system, and targeted rail investments. The long-term cost estimate of these investments is \$16.5 billion over 30 years (INDOT, 2013).

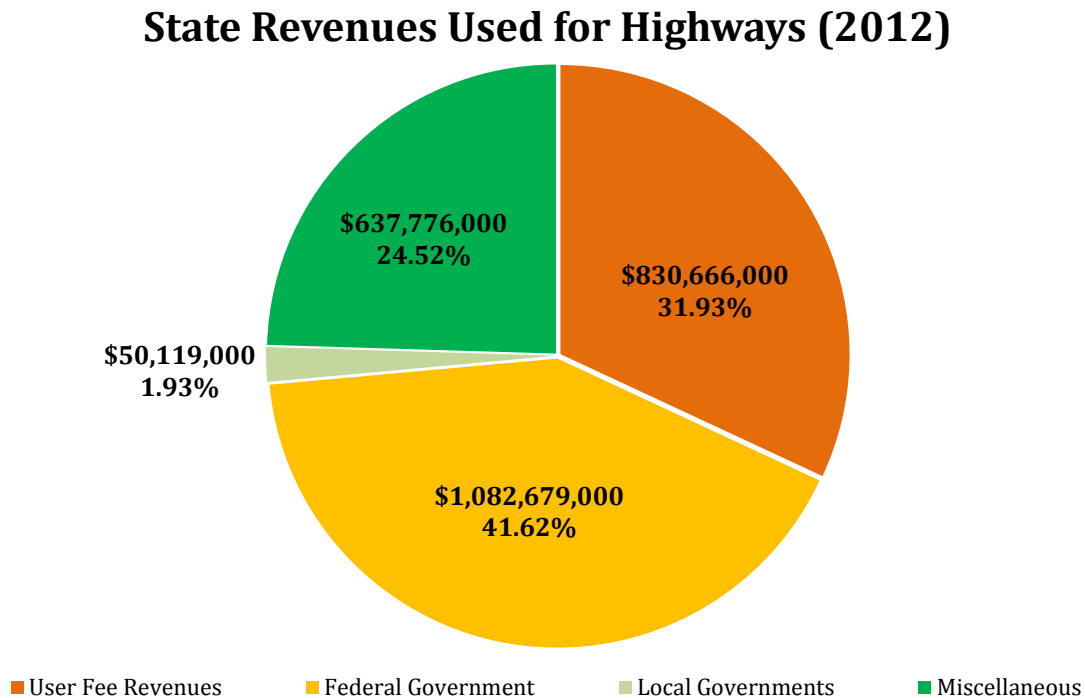
The future population of Indiana deserves better, higher-quality infrastructure. By 2030, Indiana is expected to have a population of 6.8 million residents, an increase of over 700,000 people (Barrella & Beck, 2009). Additional services and system expansions are necessary to support this growth, alleviate accompanying effects on congestion, and ensure that firms in Indiana are able to efficiently transport their products to the market.

Current Revenue Streams Are Insufficient to Meet Future Demand

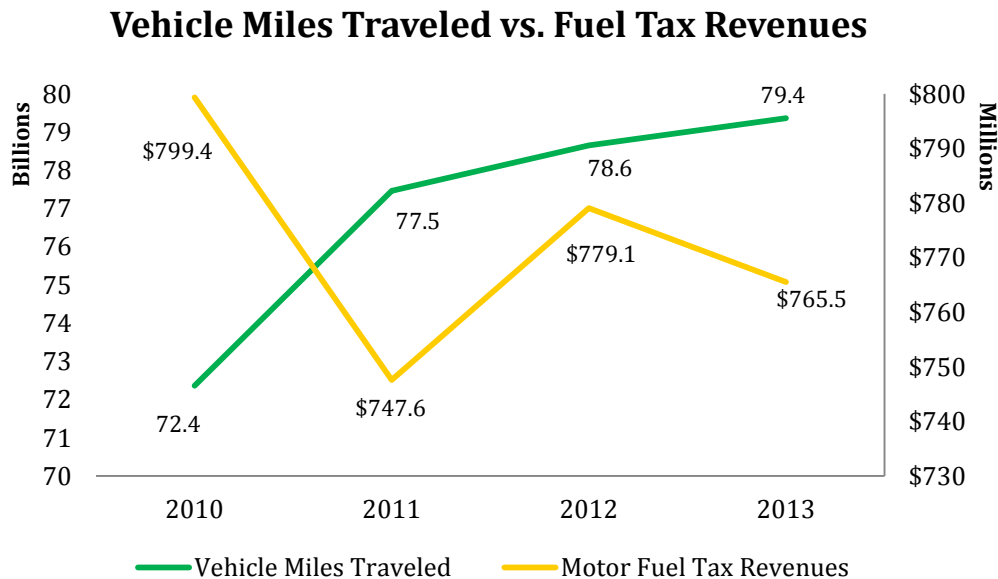
Public funding to operate, maintain, and invest in the state's transportation system is presently supported by user fees, the Major Moves initiative, federal spending, and bonds. In 2012, total revenues used for highways totaled \$2.71 billion. Of this \$2.71 billion in actual revenues, 30.7 percent was derived from user charges— a large portion of Fuel Taxes, vehicle licenses and registrations, and fees. Federal government funds accounted for 41.6 percent of all revenues and other funds (including from the Major Moves programs and from bonding) comprised 24.5 percent (Figure 1).

The long-term outlook of these revenue streams is negative. Declining and unstable revenue poses a significant challenge for long-term finances of transportation infrastructure investment. First, the successful Major Moves program is concluding, meaning that about a quarter of a billion dollars in per-year transportation funding is no longer available. Future state funding will only occur when capital bills are enacted by the Indiana General Assembly. This political uncertainty has a negative impact on businesses, making it difficult for construction firms to make investments in workers and equipment. Second, the state cannot count on continued funding from the federal government. Annual federal government funding has fallen from its peak due to the decline in proceeds of the American Recovery and Reinvestment Act. The Highway Trust Fund is only expected to bring in 2.6 percent more revenue between 2014 and 2024 despite far greater increases in costs, resulting in a 30 percent reduction in real federal money available for highways and a 65 percent drop in available funds for public transit by 2025 (CBO, 2012).

Fuel Tax revenues are declining even as total vehicle miles traveled in Indiana are rising (Figure 2). In 2010, the number vehicle miles traveled in Indiana was 72.4 billion. Vehicle miles traveled have since increased to 79.4 billion, a *growth* of 9.7 percent over three years. Fuel Tax revenues have fallen from their 2010 value of \$799.4 million to \$765.5 million in 2013, a *decline* of 4.2 percent over three years. Put differently, for every mile traveled, motorists paid 1.1 cents in Fuel Taxes in 2010, but they paid 0.9 cents per mile in 2013 despite an increase in vehicle miles traveled.

Figure 1: Revenue Sources for Highways in Indiana, 2012

Source: Federal Highway Administration, 2013. "Highway Statistics Series: Indiana 2012 State Statistical Abstract."

Figure 2: Revenue Sources for Highway Expenditures in Indiana Over Time, 2010-2013

Sources: Indiana Auditor, 2010-2013. Indiana Comprehensive Annual Financial Reports; Indiana Department of Transportation, 2014. "Traffic Data."

In an attempt to address this problem, the Indiana General Assembly has legislated a "Gasoline Use Tax" in addition to the at-the-pump fuel tax. The "Gasoline Use Tax" is based on a *percentage* of the statewide average retail price of gasoline rather than a simple per-gallon rate. As of the summer of 2014, the Gasoline Use Tax is now imposed on *distributors*, replacing the former system which was a prepaid sales tax on gasoline collected from retail merchants. Incorporating a percentage tax means that the rate responds to inflation, increasing when the price of gasoline rises (INDOR, 2014).

Regardless of whether fuel taxes are flat or percentage rates per gallon, revenues will only continue to decline as automobiles become more fuel efficient over the next two decades. Corporate Average Fuel Economy (CAFE) Standards for passenger cars had been held constant at 27.5 miles per gallon (mpg) for 21 consecutive years until 2011. During that time, regulations on “light trucks” (including SUVs) were set between 20.0 and 23.5 mpg each year. In 2011, CAFE Standards rose to 30.2 mpg for passenger cars and 24.1 mpg for light trucks (EPA, 2011). By 2025, CAFE Standards are to be raised significantly, to:

- 61 mpg for passenger cars that are 41 square feet or smaller,
- 46 mpg for passenger cars that are 55 square feet or larger,
- 50 mpg for light trucks that are 41 square feet or smaller, and
- 30 mpg for light trucks that are 75 square feet or larger.

The number of alternative fuel vehicles (AFVs) on Indiana roads is expected to substantially increase. By 2025, AFVs will account for 10 percent of all cars and 19 percent of all trucks on the nation’s roads. Accordingly, 14.4 percent of all vehicle miles traveled in America will be driven by AFVs in 2025 (EIA, 2014). The increases in fuel economy mean that Indiana drivers will buy fewer gallons of gasoline. According to INDOT data, gasoline consumption in the state averaged 3 million gallons in the five year period from 2009 through 2013. By 2025, gasoline consumption is expected to fall to 2.4 billion gallons (a 20 percent drop), despite rising vehicle miles traveled (Ellspermann & Langham et al., 2014). Since the Fuel Tax is a per-gallon levy in Indiana, revenues could be considerably depleted by 2025. It is worth noting that this decline will also harm cash-strapped local governments significantly: each year, 45 percent of all Highway Road and Street Fund revenues (supported by Fuel Taxes) are allocated to local governments for road purposes.

Given these realities, Indiana will need to either extract more revenues from existing sources (e.g., raise gas tax rates) or receive money from new revenue bases to build and maintain the state’s roads (GAO, 2012).

The Oregon Model: Why a Road User Fee Works

The best mechanism to replace current revenue sources is a road user fee based on vehicle miles traveled. Road user fees charge motorists based on their actual usage of the system. Those who drive more, pay more. A road user fee can price usage of a state’s highways and streets at a cost equal to the damage incurred to the road by the car plus the cost of modernizing the infrastructure to meet new demands in the future. A motor fuel tax, by contrast, charges inefficient vehicles more because they must refill at gas stations more often. While a motor fuel tax encourages consumers to purchase vehicles with higher fuel economies, it is economically unfair for some motorists to pay less even though they cause the same amount of damage and have the same amount of access. A road user fee program can maintain the incentive to purchase a fuel-efficient automobile by expending additional revenues generated on infrastructure investment for alternative fuel vehicles.

The State of Oregon has been the nation’s pioneer of the “user pays principle.” In 1919, Oregon became the first state to implement a gas tax to fund the maintenance and operation of the state’s roads (Whitty, 2007). Over eighty years later, the Oregon legislature recognized that a motor fuel tax was no longer a fair way to pay for investments in horizontal infrastructure because hybrid and electric vehicles were paying less or no fuel tax. The legislature thus established an independent Road User Fee Task Force in 2001 to devise a distance-based alternative to the gas tax.

After considering 28 different funding ideas, the task force conducted a pilot program to study the “Oregon Mileage Fee Concept,” which replaced the gas tax with a mileage-based fee collected at fueling stations. The pilot program launched in April 2006, lasted for 12 months, and included 285

volunteer vehicles, 299 motorists, and two service stations in Portland. Upon completion of the program, the Oregon Department of Transportation (ODOT) found that the vehicle miles traveled fee could be integrated with the service station point-of-sale system; that administration is almost entirely automated and places minimum burden on business; and that the concept was viable for the state. Over nine-in-ten (91 percent) participants in the pilot program responded that they would agree to continue paying the mileage fee instead of the gas tax (Whitty & Capps, 2014).

Evaluation of the initial pilot program found that the number one concern for the motoring public was protecting privacy (Whitty, 2007). Although people regularly surrender their personal data when they use cellular phones or when they pay for goods and services with credit or debit cards, many are not comfortable sharing the same information with the government. To address these concerns, ODOT designed the use of a GPS receiver so that no one would have the ability to track a vehicle's movements. Additionally, the pilot used private companies to create the transponders, automobile manufacturers to install the devices, service stations to extract the data on mileage, and private firms to maintain or repair the devices. In this way, Oregon did not give the state government any direct access to the transponders.

From 2012 to 2013, ODOT conducted a second pilot program called the "Road Usage Charge Pilot Program" (or RUCPP). Involving 88 drivers from Oregon, Washington, and Nevada, drivers were charged 1.56 cents per mile traveled in the RUCPP. The program addressed the public's privacy concerns while also incorporating the most-current technologies for reporting vehicle miles traveled. Since the beginning of Oregon's first program, mobile Internet access and the range of mobile apps "increased worldwide demand for mobile computing technology exponentially" (Whitty & Capps, 2014). These technological advances reduced administrative costs to the state and allowed participants in the second pilot program far more freedom in choosing their own GPS-tracking device. Participants were also permitted to choose from five possible payment plans.

Figure 3: Reported Impacts of Oregon RUCPP on Revenue Collected (Whitty & Capps, 2014)

TABLE 5-2

Per-Mile Charge vs. Fuel Tax Based on RUCPP Oregon Mileage of 121,371				
FLEET FUEL ECONOMY SCENARIO	GALLONS OF FUEL CONSUMED	FUEL TAXES COLLECTED	PER-MILE CHARGE COLLECTED	PER-MILE VS. PER-GALLON
19.2 mpg	6,311	\$1,893	\$1,893	0%
24.7 (RUCPP actual)	4,914	\$1,479	\$1,893	+28%
40 mpg	3,034	\$910	\$1,893	+108%
55 mpg	2,207	\$662	\$1,893	+186%
All electric vehicles	\$0	\$0	\$1,893	N/A

Source: Whitty, James and Darel Capps (2014). "Road Usage Charge Pilot Program 2013 & Per-Mile Charge Policy in Oregon," Page 23.

Analysis of the second pilot program yielded positive results (Whitty & Capps, 2014). The average fuel economy of RUCPP participants was 24.7 miles per gallon. For these cars, the per-mile rate of 1.56 cents generated 28 percent more revenue than the state's 30 cents per gallon fuel tax. For highly fuel-efficient cars with a fuel economy of 40 miles per gallon, the program raised revenues by 108 percent (Figure 3). Participants were also satisfied with the program: 92 percent said that the system was "easy" or "very easy" to use and 90 percent reported that they had either a more positive view or no change in their view of road usage after participating. The success of this pilot program has led Oregon legislators to establish a permanent road usage charge system to collect revenue from 5,000 volunteers beginning in July 2015.

Ultimately, a road user fee program is a smart, modern mechanism to fund transportation system improvements. Oregon's experience proves that road user fees are easy to use, are fair to taxpayers, and maintain fiscal responsibility. To address the extant and looming funding shortfalls, Indiana should develop its own road user fee based on the positive benefits of the Oregon model.

POLICY PROPOSAL

The Indiana Road Infrastructure and Driver Enhancement (IN-RIDE) Program

To address the state's current and future transportation infrastructure needs with a modern, sustainable, and comprehensive funding method, the Midwest Economic Policy Institute (MEPI) and the Indiana, Illinois, Iowa Foundation for Fair Contracting (IIIFFC) propose the implementation of the Indiana Road Infrastructure and Driver Enhancement policy, or IN-RIDE. The goal of the IN-RIDE is to institute a true pay-as-you-go system where motorists pay for what they use and costs are not placed on future generations. The IN-RIDE thus intends to replace the Fuel Tax for Indiana motorists (while still collecting Fuel Taxes from out-of-state motorists) and to provide a consistent revenue stream to fund indefinite "Major Moves" programs without uncertain or complex lease agreements. The IN-RIDE applies to all Indiana drivers and truckers, promotes infrastructure investment, and supports "high-road" economic development in the state.

The IN-RIDE is a user fee on each mile traveled by a vehicle that equals the damage the vehicle causes as it uses the system *plus* costs to construct new infrastructure for future needs that reduce congestion and keep the economy moving. The IN-RIDE considers Recommendation 3-2 of the 2014 *Blue Ribbon Panel on Transportation Infrastructure* final report to Governor Mike Pence: "Funding streams should be 'user fee' in concept for all modes of transportation." The panel noted that "[u]ser fees tie the use of transportation infrastructure to the responsibility for preserving the infrastructure" and that a vehicle mileage fee, if enacted, "would replace traditional gas tax" revenues (Ellspermann & Langham et al., 2014). The key to the IN-RIDE's success is allowing individuals to make choices. If a flat rate plan is not chosen, devices which support global positioning system (GPS) technology or odometer readings are required to record mileage data for each vehicle.

The IN-RIDE program must incorporate public-private partnerships (P3s) such that private sector vendors manage the collection of IN-RIDE fees each month. The P3 arrangement promotes cost efficiency and protects an individual's right to keep his or her personal information private from the state government. The private vendor is responsible for storing mileage data; maintaining user accounts; sending monthly, quarterly, or annual invoices to participants for all vehicle miles traveled; collecting IN-RIDE charges; and transferring revenues to the state. Only the private vendor will have access to Vehicle Identification Numbers (VINs). Private vendors will also be responsible for repairing and maintaining GPS devices and mobile apps.

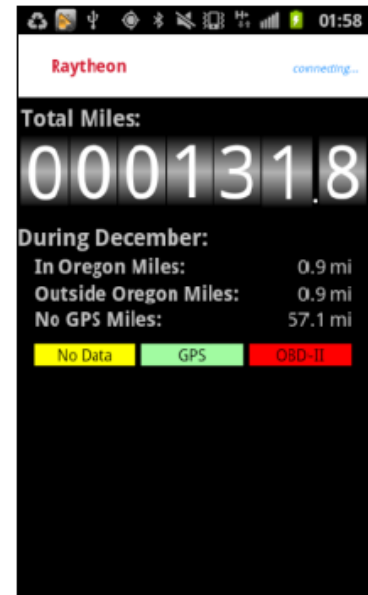
After a public procurement process, the commission administering the IN-RIDE (discussed on Page 11) will select lowest-cost responsible firms to administer the program, which will be allowed to charge a "convenience fee" of between 2.0 and 4.0 percent.¹ Private vendors could use the vehicle miles traveled system as a platform for marketing other pay-as-you-drive insurance and tolling services, an added incentive to submit a bid. It is worth noting that the Oregon Department of Transportation issued a Request for Information (RFI) on its second pilot program and received 28 responses, both domestic and international. A Request for Proposal (RFP) was subsequently sent to

¹ Under the three funding scenarios outlined on Pages 12 and 13, total collections to the private firm would total approximately \$25.6 million annually, assuming a 3.0 percent convenience fee on the "full capacity" plan.

the 28 companies and yielded 10 proposals, from which two groups were contracted to provide services (Whitty & Capps, 2014).

Motorists can select from three options to report miles traveled, all operated by a private sector partner, in accordance with their own preferences for personal privacy:

1. **The IN-RIDE Smart Plan** – This plan would report only miles traveled on public, non-tolled Indiana roads, and is the economically-efficient option. Using GPS tracking technology, a smartphone app or a tracking device similar to the EZ-Pass will use location data to calculate how many miles were driven in Indiana each month. It would be able to identify when miles were driven out-of-state and off public roads (such as on the Indiana East-West Toll Road), but would not charge motorists for these miles. Excluding miles traveled on toll roads is not a necessity because drivers currently pay Fuel Taxes in addition to the tolls. The goal is simply to ensure that drivers are only charged for using in-state non-tolled infrastructure. To protect privacy, the devices and apps would be designed such that they cannot retain any travel history after three months.
2. **The IN-RIDE Convenient Plan** – Indiana residents who wish to keep their location private can choose the Convenient Plan. This option records all miles traveled without the use of location services when the device is plugged into the vehicle. Therefore, under the Convenient Plan, no location information is transmitted to private firms but drivers are charged for all miles driven, regardless of whether the miles were in-state or out-of-state. This plan costs more, but the added charge is essentially a premium paid to ensure privacy.
3. **The IN-RIDE Flat Rate Plan** – Finally, drivers can choose to pay a flat monthly rate plan to avoid mileage reporting altogether. Under the Flat Rate Plan, motorists will be charged the same rate regardless of how many miles they drive. This plan is based on an assumed maximum number of miles driven per year (30,000 miles per year for passenger vehicles and single unit trucks and 50,000 miles per year for buses and multiple unit trucks). For the average motorist, this is the most expensive option, but provides an alternative for those who do not want to have any form of mileage reporting technology in their automobiles.



The Fuel Tax will still exist to capture revenues from out-of-state drivers. In each monthly bill, however, Indiana motorists who choose the Smart Plan and the Convenient Plan will be credited for Fuel Tax payments made at the pump according to the total number of miles driven (on only Indiana's public roads for those who select the Smart Plan). For example, suppose an Indiana motorist drives 2,000 miles in one month on in-state public roads in a 20-mpg fuel economy car. She used 100 gallons of gasoline that were taxed at \$0.18 per gallon and will be credited \$18.00 on her monthly bill. Individuals or households who choose the Flat Rate Plan would not receive Fuel Tax credits.

Protecting Privacy Concerns: Choice of Technologies

Private vendors will ultimately determine the best technologies available in the marketplace to administer the IN-RIDE while protecting the privacy of Indiana residents. However, many technologies currently exist that could be used to collect a road user fee. The important factor to note is that there will be no government mandate to use global position system (GPS) location services to track a vehicle's miles driven – motorists will be able to choose from various options.

First, electronic reporting is not *necessarily* a requirement for private vendors to collect revenues. Total vehicle miles traveled could be reported using annual vehicle inspections. Establishing 300 locations (about one for every school district) at local DMVs and private vendors (e.g., auto repair shops or grocery stores) where motorists could go for annual reports would require a one-time capital cost but would eliminate the need for electronic recording. The annual inspection method would fall under the Convenient Plan since there would be no differentiation of miles traveled in-state, out-of-state, or on toll roads, but would allow for manual reporting. Billings in this case would likely occur once a year or on a semi-annual basis. The Flat Rate plan also eliminates the need for GPS tracking or other electronic reporting.

There is a robust marketplace of devices which currently support miles-traveled fees (Sorensen et al., 2012). The pay-as-you-drive insurance industry uses “dongles,” plugged into the vehicle’s on-board diagnostics (OBD-II) port under the steering wheel, which has been standard in all cars since 1996. A dongle is ¾” by 2” car adapter—roughly the size of an ink jet printer cartridge and similar to a USB plug-in for online streaming from a computer or television, such as a Chromecast. Dongles can transmit data on both trips and the car’s engine health to a motorist’s phone, allowing consumers to make better decisions about their driving habits. These devices are easy to install: less than one-in-ten participants in the second Oregon pilot program called the “Help Desk” to find their diagnostic port to insert the device (Whitty & Capps, 2014). In addition, many high-end and electric automobiles include in-vehicle telematics, or infotainment systems, that are capable of wirelessly reporting mileage data. Motorists in vehicles with this feature would not require an external device but would simply activate their current system. Finally, GPS boxes or mobile applications with location services can easily track a vehicle’s movements, charge the users of public roads only for their usage in Indiana, and benefit consumers by providing up-to-date directions to save time and fuel in their trips.

Dongles, in-vehicle telematics, and GPS boxes or smartphone apps all allow motorists to transmit mileage data under either the Smart Plan or the Convenience Plan. Advanced GPS technology with wireless communications is capable of determining state jurisdiction, exact routes, and potentially the specific lane of travel—possibly permitting true congestion pricing in the future. Most Americans already grant private firms access to their physical location when they use location services on their smartphone applications, connect to the Internet through their IP address, and swipe their credit or debit cards. The IN-RIDE technologies would be no different. Each technology, however, can also serve as a simple odometer and report total miles traveled to the private vendor each month under the Convenience Plan, without the need for GPS tracking.

The key to the IN-RIDE is motorist choice. Location tracking will only occur for those who choose the cheapest, Smart Plan option. State and local governments—including law enforcement agencies—will have no access to these individual movements. The private partners will collect this information and then appropriately bill each household for their proper vehicle miles traveled, transferring only fee collections over to the state. Finally, the GPS devices and apps will be designed such that they cannot retain any travel history after three months, or another legislated amount of time.

However, by conceding a modicum of privacy, motorists who select the Smart Plan with GPS tracking would receive significant benefits. As previously noted, the Smart Plan allows motorists to enroll in cheaper pay-as-you-drive insurance plans, sends motorists reports on their driving habits and vehicle condition to help them make better decisions, provides up-to-date travel directions via GPS technology to save time and money, and ensures that motorists only pay for miles traveled on non-tolled roads in Indiana. Nonetheless, regardless of the chosen plan, the IN-RIDE benefits all commuters and families by providing the revenue needed to repair and expand Indiana’s infrastructure—removing potholes, fixing bridges, and modernizing railroad networks.

Analysis of Indiana Travel Statistics

In 2012, the most recent year for which all relevant data are available, there were 5.4 million driver's licenses issued to Indiana residents (Figure 4). There were also 1.1 automobiles per driver in Indiana, or 6.0 million total vehicle registrations. Of these vehicle registrations, 50.2 percent were passenger vehicles and 48.9 percent were single-unit trucks. Passenger units include cars, minivans, and motorcycles while single unit trucks comprise vehicles such as passenger trucks, SUVs, and most moving trucks. The total number of vehicle miles traveled on Indiana roads was 78.9 billion miles, including 1.5 billion miles (1.9 percent) on tolled infrastructure. This travel was fueled by 3.0 billion gallons of gasoline and 1.3 billion gallons of special fuel, such as diesel. Ultimately, the state collected \$765.5 million in Fuel Tax receipts.

Figure 4: Indiana Vehicle and Travel Statistics, 2012

2012 Indiana Statistics	
Indiana Fuel Tax Revenues	\$765,519,000
Indiana Vehicle Miles Traveled	78,923,000,000
Toll Roads (2011)	1,506,256,450
Public Roads	77,416,743,550
National Mileage Per Vehicle	11,705
Passenger	11,265
Single Unit Trucks	11,882
Buses	25,172*
Multiple Unit Trucks	25,172
National Mileage Per Gallon	17.63
Passenger	23.32
Single Unit Trucks	17.12
Buses	6.10
Multiple Unit Trucks	6.36
Indiana Vehicle Registrations	6,004,357
Passenger	2,662,244
Single Unit Trucks**	3,280,585
Buses	8,745
Multiple Unit Trucks**	52,783
Indiana Driver's Licenses	5,375,973
Indiana Total Fuel Usage	4,280,549,000
Gasoline	3,019,345,000
Special Fuel	1,261,204,000

Sources: 2012 Indiana Comprehensive Annual Financial Report; Federal Highway Administration, 2013. "Highway Statistics Series: Indiana 2012 State Statistical Abstract"; U.S. Energy Information Administration, 2014. "Monthly Energy Review October 2014"; 2012 County Business Patterns in Indiana – "Truck Transportation" employees; and Bureau of Transportation Statistics, 2012. "Transportation Statistics Annual Report."

*No data was available for national mileage per bus, so the figure for multiple unit trucks was used. Note that the Chicago Transit Authority's 1,865 active buses traveled 159,781 miles per day for 365 days per year. Thus, CTA mileage per bus was 31,371 miles – so the 25,172 multiple unit truck estimate is a reasonable estimate for buses. **Data are only presented as "trucks." For comparability, multiple unit trucks need to be subtracted out. As a proxy for multiple unit truck registrations, "Truck Transportation" employees from the Indiana profile of U.S. County Business Patterns were used.

A serious IN-RIDE proposal must account for the share of vehicle miles traveled in Indiana *by Indiana motorists*. To approximate the number of miles driven by in-state vehicles, national information on both annual mileage per vehicle and average fuel economy are included in Figure 4. This analysis assumes that Hoosier families and commuters own or rent automobiles that are similar to the national average and that they have similar annual travel habits to the rest of American

motorists. In 2012, the average national mileage per vehicle was 11,705 miles per year. Passenger vehicles traveled the smallest total distance (11,265 annual miles) while multiple unit trucks journeyed the farthest (25,172 annual miles). Nationwide, the fuel economy of the average vehicle was 17.63 miles per gallon in 2012, but the most fuel-efficient class was passenger vehicles (23.32 mpg) and the least fuel-efficient was buses (6.10 mpg).

Figure 5 estimates total Fuel Tax revenues based on these statistics and estimates. For example, the 2.7 million passenger vehicles were assumed to have each traveled 11,265 miles in 2012, equating to 30.0 billion annual vehicle miles traveled by automobiles in this class. With a fuel economy of 23.32 mpg, this means that 1.3 billion gallons of gasoline were consumed to power these vehicles. At a gas tax rate of \$0.18 per gallon, Indiana's passenger vehicles were estimated to have contributed \$231.5 million in Fuel Tax revenues in 2012. This same process is used to value Fuel Tax contributions for single unit trucks, buses, and multiple unit trucks. Ultimately, Indiana motorists are found to have supplied \$680.5 million in Fuel Tax revenues, or 88.89 percent. On the other hand, out-of-state drivers accounted for 11.11 percent of revenues.

Figure 5: Estimated Fuel Taxes Paid by Indiana Drivers Only, By Class of Vehicle, 2012

Class of Vehicle Registered by Indiana Motorists	Total Vehicle Miles Traveled	Total Gallons Consumed	Fuel Tax Rate	Fuel Tax Revenues
Passenger Vehicle	29,990,178,660	1,285,862,825	\$0.180	\$231,455,308
Single Unit Trucks	38,979,910,970	2,276,730,972	\$0.180	\$409,811,575
Buses	220,129,140	36,086,744	\$0.160	\$5,773,879
Multiple Unit Trucks	1,328,653,676	209,006,399	\$0.160	\$33,441,024
Total	70,518,872,446	3,807,686,939	---	\$680,481,786
Estimated Revenues From Indiana Motorists as a Share of All Revenues in 2012				88.89%

Sources: See Figure 4.

This estimate makes sense. Even though Indiana is at the “Crossroads of America,” the typical motorist on any given Indiana road is not a visitor. He or she is a commuter heading to work or a consumer going to shops and restaurants or a parent bringing family to a friend's house. Moreover, for comparative purposes, the share of construction work done in Indiana by in-state businesses was 90.5 percent, according to the 2007 Economic Census (Manzo et al., 2014). Presuming that 88.89 percent of vehicle miles were traveled by in-state residents is thus a practical estimate.

IN-RIDE Rates: Three Possible Scenarios

An IN-RIDE Commission will be established to set IN-RIDE rates according to demand. An independent body, the IN-RIDE Commission will consist of 14 members. The Governor of Indiana (or a representative) and the INDOT Secretary of Transportation (or a representative) will serve as ex officio, nonvoting members. The other 12 commissioners shall be appointed from the six INDOT districts (two per district) by the legislature to serve one four-year term. No more than 8 commissioners can be from the same political party as the Governor. Only the 12 regional commissioners have voting power. A Chair must also be elected among the regional commissioners by the regional commissioners for a two-year term. Finally, the Commission would consider nonbinding INDOT staff recommendations, but would vote on matters autonomously.

Figures 6, 7, and 8 present anticipated annual IN-RIDE revenues based on three possible rate schedules. Estimates are based on reported statewide vehicle miles traveled by vehicle class from INDOT for 2012. They also assume that 98.1 percent of vehicle miles traveled were on public, non-tolled roads and that 88.89 percent of all miles were traveled by vehicles registered in Indiana (INDOT, 2014b). Revenues are displayed first assuming that 100 percent of Indiana motorists chose

the Smart Plan– the most conservative for revenue projections– and then assuming that every Indiana driver chooses the Flat Rate Plan– which offers the highest possible revenue projections.

Figure 6: Estimated New Revenues from IN-RIDE, Replacement-Level Rates

Scenario 1: Replacement-Level Rates				
2012 Vehicle Miles Traveled on Public Roads (98.1%)	Annual Vehicle Miles Traveled	IN-RIDE Rate	100% Smart Plan Revenues	100% Flat Rate Plan Revenues
Passenger Vehicles and Single Unit Trucks	67,652,760,918	\$0.015 per mile	\$884,818,969	\$2,674,273,050
Buses and Multiple Unit Trucks	1,519,201,064	\$0.025 per mile	\$33,115,621	\$76,910,000
Total	69,171,961,982		\$917,934,590	\$2,751,183,050
Fuel Taxes from In-State Motorists			-\$667,472,865	-\$667,472,865
New Revenues under 100% IN-RIDE Smart Plan			\$250,461,725	\$2,083,710,185

Under the first scenario, the IN-RIDE rates effectively replace the Fuel Tax (Figure 6). The “replacement-level rates” are 1.5 cents per mile for passenger vehicles and single unit trucks and 2.5 cents per mile for buses and multiple unit trucks. At 2012 levels of annual vehicle miles traveled on non-tolled roads, this rate schedule would generate \$917.9 million in annual funds if every driver had a location-based tracking plan. Compared to actual Fuel Tax revenues, these rates would result in a \$250.5 million net gain in annual funding. Because some motorists will choose the Convenient Plan and the Flat Rate Plan, however, higher overall revenues are likely in this scenario. Rates in the replacement-level scenario mirror the per-mile charge of the Oregon Model: Starting June 2015, 5,000 volunteers will pay 1.5 cents per mile traveled in the state.

Figure 7: Estimated New Revenues from IN-RIDE, Improvement Rates

Scenario 2: Improvement Rates				
2012 Vehicle Miles Traveled on Public Roads (98.1%)	Annual Vehicle Miles Traveled	IN-RIDE Rate	100% Smart Plan Revenues	100% Flat Rate Plan Revenues
Passenger Vehicles and Single Unit Trucks	67,652,760,918	\$0.025 per mile	\$1,474,698,282	\$4,457,121,750
Buses and Multiple Unit Trucks	1,519,201,064	\$0.035 per mile	\$46,361,870	\$107,674,000
Total	69,171,961,982		\$1,521,060,152	\$4,564,795,750
Fuel Taxes from In-State Motorists			-\$667,472,865	-\$667,472,865
New Revenues under 100% IN-RIDE Smart Plan			\$854,587,286	\$3,897,322,885

Under the second scenario, the IN-RIDE rates replace the Fuel Tax revenues while allowing the state to make critical infrastructure improvements (Figure 7). The following are the “improvement rates” in this scenario: 2.5 cents per mile for passenger vehicles and single unit trucks and 3.5 cents per mile for buses and multiple unit trucks. At 2012 levels of annual vehicle miles traveled on public roads, this rate schedule would generate \$1.52 billion in annual funds if every driver had a location-based tracking plan. Compared to actual Fuel Tax revenues from in-state drivers, these rates would result in an \$854.6 million net gain in annual funding. The rates are higher than those in Oregon, for reasons explained on Page 19.

Under the third and final scenario, the IN-RIDE rates not only replace the Fuel Tax and let the state make critical improvements, but also allow Indiana’s infrastructure to reach record levels of quality (Figure 8). “Full capacity rates” are 3.5 cents per mile for passenger vehicles and single unit trucks and 4.5 cents per mile for buses and multiple unit trucks. At 2012 levels of annual vehicle miles traveled on non-tolled roads, this rate schedule would generate \$2.12 billion in annual funds if every driver had a location-based tracking plan. Compared to actual Fuel Tax revenues, these rates would

result in a \$1.46 billion net gain in annual funding. Due to motorists who choose the Convenient Plan and the Flat Rate Plan, however, this increase in revenue is likely to be even larger.

Figure 8: Estimated New Revenues from IN-RIDE, Full Capacity Rates

Scenario 3: Full Capacity Rates				
2012 Vehicle Miles Traveled on Public Roads (98.1%)	Annual Vehicle Miles Traveled	IN-RIDE Rate	100% Smart Plan Revenues	100% Flat Rate Plan Revenues
Passenger Vehicles and Single Unit Trucks	67,652,760,918	\$0.035 per mile	\$2,064,577,595	\$6,239,970,450
Buses and Multiple Unit Trucks	1,519,201,064	\$0.045 per mile	\$59,608,118	\$138,438,000
Total	69,171,961,982		\$2,124,185,713	\$6,378,408,450
Fuel Taxes from In-State Motorists			-\$667,472,865	-\$667,472,865
New Revenues under 100% IN-RIDE Smart Plan			\$1,456,712,848	\$5,710,935,585

Whatever the chosen rate schedule, the rates must be indexed to inflation– the Construction Cost Index– to maintain a predictable and sustainable revenue stream, following Recommendation 3-1 of the *Blue Ribbon Panel on Transportation Infrastructure*. According to the panel’s report, “[i]nflation leads to diminished purchasing power, which inhibits the state’s ability to preserve and enhance its transportation system” (Ellspermann & Langham et al., 2014). MEPI and the IIFFC recommend that the per-mile fees are adjusted after five-year intervals. Accounting for inflation over a longer-period of time avoids periods of sudden change (e.g., economic recessions) in the rate of inflation and constantly instills a half-decade of revenue certainty for both businesses and policymakers.

Figure 9: Comparison of Proposed IN-RIDE Rates to Per-Mile Charges in Indiana and Indiana

Type of Road User Fee	Passenger Vehicles	Heavy Trucks
First Scenario: Replacement-level Rates	\$0.015 per mile	\$0.015 per mile
Second Scenario: Improvement Rates	\$0.025 per mile	\$0.030 per mile
Third Scenario: Full Capacity Rates	\$0.035 per mile	\$0.040 per mile
Indiana East-West Toll Road Rate	\$0.063 per mile	\$0.252 per mile
Average Illinois Tollway Rate	\$0.060 per mile	\$0.440 per mile
Aggregate VOC Cost of Driving on Poor Roads	\$0.038 per mile	---

Sources: Indiana Toll Road, 2014. “New Toll Rates Effective July 1, 2014”; Indiana Tollway, 2014; American Society of Civil Engineers, 2010. “2010 Report Card for Indiana’s Infrastructure.”

The rates in all three scenarios are lower than per-mile charges to use the Indiana East-West Toll Road (Figure 9). The average price on the Indiana Toll Road is 6.3 cents per mile if using an EZ-Pass transponder for passenger vehicles and 25.2 cents per mile for heavy trucks. Comparatively, the average Illinois tollway rates are 6.0 cents per mile for passenger vehicles and 44.0 cents per mile for heavy trucks. Finally, the American Society of Civil Engineers’ 2010 report card for Indiana’s infrastructure noted the following (ASCE, 2010):

“The condition of a road directly correlates to the vehicle operation costs (VOC), including vehicle maintenance and increased fuel costs. The aggregate cost per mile for a road in excellent condition is \$0.212 per mile traveled, meaning if all the roads in Indiana were in excellent condition, the VOC for the entire state of Indiana would be approximately \$15.75 billion dollars. Now, consider that 77 percent of county roads and 19 percent of state highways are considered unsatisfactory, and the cost per mile traveled can increase to \$0.250.”

Thus, back-end personal costs of vehicle repairs and increased fuel are currently 3.8 cents per mile *more than* they would be if the whole system was in excellent condition at full capacity (25.0 cents minus 21.2 cents). Essentially, the average driver is already paying this 3.8-cent-per-mile cost of

driving on poor roads and will continue to pay it under the present system. The IN-RIDE “full capacity” rates of 3.5 cents and 4.5 cents per mile, however, provide a policy solution at the front-end while saving time for motorists so that trips to auto repair shops are reduced.

Like the rest of the nation, the State of Indiana has historically underfunded transportation, which has had a direct, negative effect on future generations. A total of \$765.5 million was deposited into state revenue funds from the Fuel Tax in 2012. Given that there were 2.48 million households in Indiana (Census, 2013) and assuming that 88.89 percent of taxes collected were from in-state motorists, the average amount paid in Fuel Taxes was about \$22 per month for the typical household.

Conversely, under the IN-RIDE rates in the full-capacity rate scenario, the state conservatively generates \$2.12 billion dollars in transportation revenues. For the typical household, the average monthly road usage bill— *including* money already expended in gas taxes at the pump— would be about \$71 in this scenario, an increase of about \$49 per month for the average household. Of course, some families who drive more will pay more and others will pay less, but \$71 is the average cost to have the highest-quality connection to jobs, restaurants, stores, and people.

The IN-RIDE invoice compares very favorably to other monthly household expenditures in Indiana (Figure 10). The costs to stay connected to power and energy grids are higher in the state: the average household energy cost is \$95 per month and the average natural gas bill is \$79 per month. To illustrate, Figure 11 contrasts a hypothetical family’s monthly electricity bill with their monthly IN-RIDE bill under the third, full capacity scenario. Additionally, the cost to stay connected to entertainment is \$60 per month for expanded basic cable service (not including Internet). Finally, many cellular phone bills range from \$120 per month to \$148 per month for American households. A world-class transportation infrastructure system is not cheap, but it is cheaper than most other household expenditures.

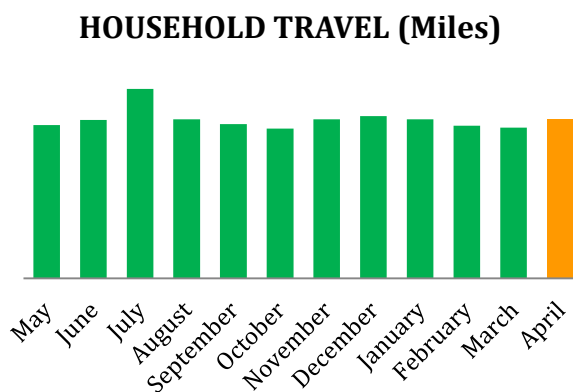
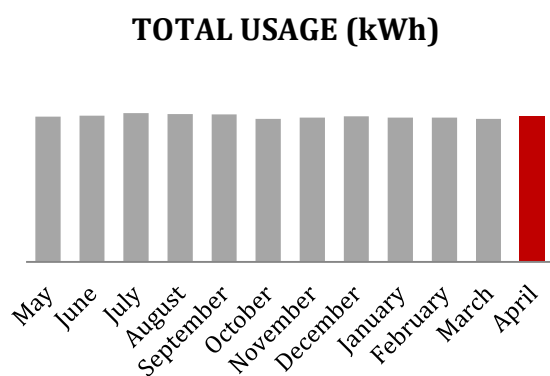
Figure 10: Average Expenditures of Indiana Households to Stay Connected, Annual and Monthly

Average Expenditures of Indiana Households	Annual	Monthly
<i>Costs to Stay Connected to: Power and Energy</i>		
Electricity Costs (2009)	\$1,145	\$95
Natural Gas Costs (2009)	\$943	\$79
<i>Costs to Stay Connected to: Entertainment</i>		
Cable TV: Expanded Basic Service	\$723	\$60
<i>Costs to Stay Connected to: Wireless Cellular Phones</i>		
Verizon	\$1,776	\$148
Sprint	\$1,728	\$144
AT&T	\$1,692	\$141
T-Mobile	\$1,440	\$120
<i>Costs to Stay Connected to: Jobs, Restaurant, Stores, and People</i>		
Current Fuel Taxes	\$269	\$22
Proposed IN-RIDE Fees: Improvement Rates (including Fuel Taxes)	\$613	\$51
Proposed IN-RIDE Fees: Full Capacity Rates (including Fuel Taxes)	\$856	\$71

Source: 2013 Indiana Comprehensive Annual Financial Report; U.S. Census Bureau State & County QuickFacts 2008-2013; Indiana: 2009 Residential Energy Consumption Survey by the U.S. Energy Information Administration; the 2014 Report on Cable Industry Prices by the Federal Communications Commission; and Johnson, 2014. “5 Low-Cost Alternatives to Your Pricey Cellphone Plan” U.S. News Money.

Figure 11: Example of Monthly Bill – Electricity vs. Full Capacity IN-RIDE for Typical Household

ELECTRICITY BILL			IN-RIDE INVOICE		
Residential - Single 4/1/15 - 5/1/15			Smart Plan - 4/1/15 - 5/1/15		
SUPPLY CHARGE		\$47.90	VEHICLE 1	2011 Ford Focus	\$34.14
Electricity Supply	700 kWh X 0.0647	\$45.29	Class	Passenger	
Transmission Services	700 kWh X 0.0102	\$7.14	Reported Fuel Economy	27 mpg	
Purchased Electricity		-\$4.53	Road User Fee	1,205.00 miles X 0.035	\$42.18
			Fuel Tax Credits	1205.00 miles X 0.18 / 27	-\$8.03
DELIVERY CHARGE		\$37.10	VEHICLE 2	2010 Chevrolet Tahoe	\$36.87
Customer		\$16.77	Class	Single-Unit Truck	
Standard Metering		\$2.41	Reported Fuel Economy	15 mpg	
Distribution Facilities	700 kWh X 0.0244	\$17.08	Road User Fee	1,301.17 miles X 0.035	\$45.54
IL Distribution	700 kWh X 0.0012	\$0.84	Fuel Tax Credits	1,301.17 miles X 0.18 / 15	-\$8.67
TAXES & FEES		\$10.00	COLLECTION FEES		\$2.84
Franchise Cost		\$4.00	Convenience Fee	\$58.01 X 0.03	\$2.84
State Tax		\$3.00	Late Fees		\$0.00
Municipal Tax		\$3.00			
TOTAL AMOUNT DUE		\$95.00	TOTAL AMOUNT DUE		\$73.85

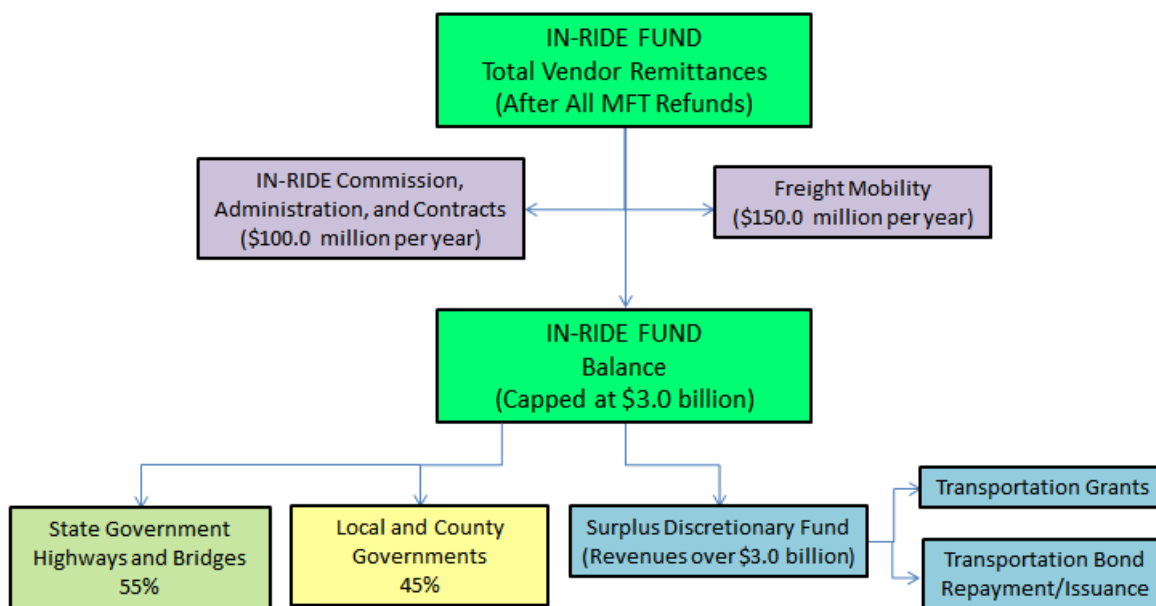


Investing IN-RIDE Funds to Serve Hoosiers

Total revenues remitted by private vendors to the state will be deposited into an Indiana Road Infrastructure and Driver Enhancement Fund. Although a new addition to total transportation revenues, the IN-RIDE Fund changes nothing about the current system. Just as is the case for Highway Road and Street Fund revenues, IN-RIDE funds still flow into a 55/45 split between the state highway system and local highway purposes. The only adjustment to the current system is that these net IN-RIDE revenues flow into the system.

Once all vendor remittances are deposited in the IN-RIDE Fund, some revenue will be taken off-the-top (Figure 12). First, \$100.0 million each year is designated for the IN-RIDE Commission and associated administrative and contractual costs. As a comparison, according to the 2013 *Comprehensive Annual Financial Report* of the Illinois State Toll Highway Authority, comparable “procurement, IT, finance, and administration” expenses totaled \$24.3 million in 2013 (ISTHA, 2013). Payroll costs are lower in Indiana than Illinois, so IN-RIDE Commission costs should be expected to cost less than the tollway commission across the border. However, the IN-RIDE Commission will be administering a new *statewide* program, so \$100.0 million is assumed as a conservative estimate to account for unexpected administrative costs. Second, a share of IN-RIDE Fund receipts will be allocated to improve Indiana’s freight mobility – including highways, railroads, airports, waterways, and ports. Each year, an additional \$150.0 million from the IN-RIDE Fund will be allocated to invest in the state’s freight movement infrastructure for long-term economic success.

Figure 12: Proposed Flow of Indiana Road Infrastructure and Driver Enhancement Dollars



The rest of the remittances will remain in the IN-RIDE Fund for infrastructure investment within the current transportation funding system. This remainder is called the “Fund Balance.” It is what is left over after administrative costs and freight mobility contributions are taken off the top *and* after Fuel Tax credits are applied. As automobiles become more fuel efficient and Fuel Tax revenues decline, this subtraction from the Fund Balance becomes a smaller number but has no effect on total transportation dollars.

The IN-RIDE Fund Balance will be *capped* at \$3.0 billion, which is only likely to occur in the third, full capacity scenario. If remaining revenues surpass \$3.0 billion, funds in excess of the cap will be deposited into a Surplus Discretionary Fund (SDF). By law, the IN-RIDE Commission shall subsequently distribute SDF monies at their discretion for two purposes: transportation grants and bond repayment or issuance.

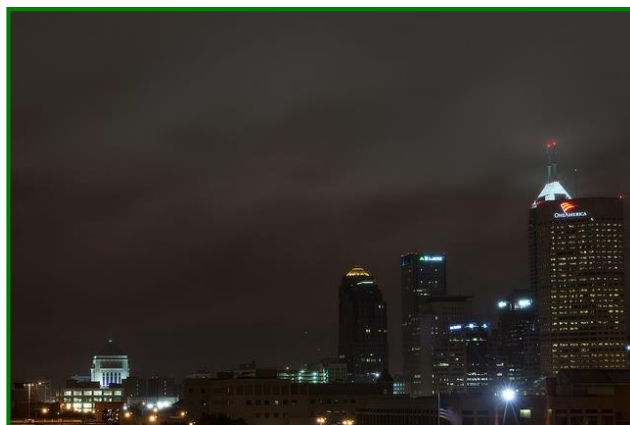
The IN-RIDE Fund Balance will also have a legislated *floor* of \$500.0 million. The goal of IN-RIDE is to provide a long-term solution to declining Fuel Tax revenues. IN-RIDE Fund collections below \$500.0 million will cause the state to experience the same problems that it faces today. Note the conservative revenue projections from the improvement rate scenario are closer to the floor than the cap, while the full capacity scenario falls in the middle. If remaining revenues fail to reach \$500.0 million, the IN-RIDE Commission is required to raise rates to make up the deficit. The commission can increase all rates or only some rates (e.g., the mileage fee on heavy multiple unit trucks and buses) at its discretion. IN-RIDE Fund Balance money between \$500.0 million and \$3.0 billion will be inserted into the current transportation framework.

Under the third scenario of per-mile fees (Figure 7), conservative assumptions produce an estimated \$1.46 billion in new revenues from the IN-RIDE. After committing \$100.0 million to administrative costs and \$150 million to freight investments, approximately \$1.21 billion is available for new transportation infrastructure spending in the first full year of the IN-RIDE.

Figure 13: Distribution of IN-RIDE Expected Revenues, 1st Year and Five-Year Plan

IN-RIDE Third Scenario: Full Capacity Rates	Distribution of Revenues in 1st Year	Ten-Year Plan, All Else Constant
Full Capacity Model (100% Smart Plan)	\$1,456,712,848	\$7,283,564,239
Administrative Costs	\$100,000,000	\$500,000,000
Freight Infrastructure Contributions	\$150,000,000	\$750,000,000
New Spending	\$1,206,712,848	\$6,033,564,239
55% State highways	\$663,692,066	\$3,318,460,331
45% Local roads and streets	\$543,020,781	\$2,715,103,907

Under the third scenario proposed, the IN-RIDE Fund Balance would generate \$6.03 billion in programmable dollars in its first five years – a portion of which should be used to invest in infrastructure that supports alternative fuel vehicles. This estimated revenue assumes that everything is constant over the next five years, including the state's population, annual vehicle miles traveled by Indiana drivers, and the schedule of mileage fees. Since the economy has steadily recovered from the Great Recession and vehicle miles traveled have increased every year since 2010, these are conservative expectations. Nevertheless, the \$6.03 billion net gain in transportation funding is equivalent to funding two new Major Moves programs in a five-year period, or twice the initiatives in half the time. In effect, it is a Major Moves initiative for the state, which would receive a net gain of \$3.32 billion, *and* a Major Moves initiative for local governments, which would receive \$2.72 billion in new transportation funding over five years.



Economic Impacts of the IN-RIDE

A \$6.03 billion boon to investments in Indiana's transportation infrastructure would deliver enormous benefits to the state economy (Figure 14). To demonstrate the potential economic impacts of the IN-RIDE program, Figure 14 provides estimates on project cost, jobs created over 25 years, congestion savings, and gross regional product for select projects listed in the final report of the *Blue Ribbon Panel on Transportation Infrastructure*. Since the panel only addressed project constructed using state funds, the analysis does not include the 45 percent of funding allocated to local governments for road purposes (\$2.72 billion). The economic impact does include, however, the \$750.0 million allocated off the top for freight mobility improvements.

IN-RIDE investments would support the construction of infrastructure similar to the Mt. Vernon Port Connector, the Port Bridge Over National Rail Corridor, the Commerce Connector, and the I-65 Added Travel Lanes projects (Ellspermann & Langham et al., 2014). The first two projects listed are freight projects, one in northwest Indiana and one in southwest Indiana. The latter two are important state highway projects which serve the Indianapolis area and rural parts of the entire state. Ultimately, forecasts of these state-funded investments estimate that a total of 108,737 jobs would be generated in Indiana over 25 years, time spent in congestion would be reduced by 23.15 million hours each year for motorists, and the Indiana economy would be boosted by \$11.40 billion.



Note that these impacts are only for state-owned projects. Investments made by city and county governments will produce positive economic results as well. It must also be noted that these are long-term impacts that result only from the first five years of the Indiana Road Infrastructure and Driver Enhancement program. Since the policy provides a dependable and sustainable revenue stream, the IN-RIDE will serve as a driver of economic growth for decades to come.

Figure 14: Economic Impacts of IN-RIDE Five-Year Plan

Project	Cost	Jobs-Years Created	Congestion Hours Saved Per Year	Gross Regional Product Impact
<i>Freight Mobility (\$750.0 million available)</i>				
Mt. Vernon Port Connector	\$620.5 million	11,067	3,660,220	\$1.026 billion
Port Bridge Over National Rail Corridor	\$18.0 million	32,587	0	\$4.300 billion
<i>State Highways (\$3.318 billion available)</i>				
Commerce Connector: I-65 to I-69	\$1.838 billion	30,107	6,078,345	\$2.838 billion
I-65 Added Travel Lanes: Rural	\$1.537 billion	34,976	13,413,385	\$3.239 billion
Totals	\$3.997 billion	108,737	23,151,950	\$11.403 billion

Source: Ellspermann, Langham, et al., 2014. Blue Ribbon Panel on Transportation Infrastructure. Final Report to Governor Pence.

Comparing Indiana to Oregon

In 2015, the vehicle miles traveled fee in the volunteer Oregon program will be 1.5 cents per mile. Research on Oregon's pilot programs found that a 1.56-cent charge per mile driven generated an average of 28% more in revenues than the state's gas tax. This proposal for an IN-RIDE road user fee, however, supports a rate of 3.5 cents per mile traveled by passenger vehicles and single unit trucks and a fee of 4.5 cents per mile for buses and multiple unit trucks. Why does Indiana's road usage charge program necessitate higher rates?

Compared to Oregon, the Indiana economy requires a higher level of infrastructure investment (Figure 15). With 3.0 million workers (58.3 percent of the population 16 years and older), the Indiana workforce almost doubles Oregon's 1.7 million workers (55.6 percent of the population 16 years and older).

Figure 15: Comparison of Workforces, Indiana vs. Oregon

Variable	Indiana	Oregon
Population, 16 Years and Older, 2013	5.1 million	3.1 million
Employed, 16 Years and Older, 2013	3.0 million	1.7 million
Employed % of Population	58.3%	55.6%

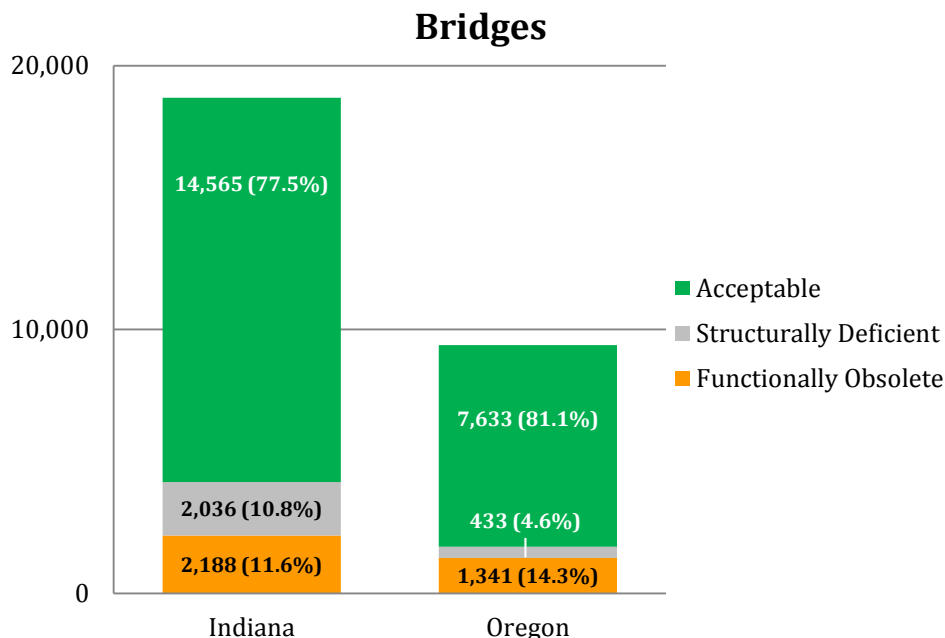
Sources: "Selected Economic Characteristics" by the 2013 American Community Survey, 3-Year Estimates.

Indiana has two times the amount of bridges as Oregon, with 18,789 bridges (Figure 16). Unfortunately, 4,224 of the state's bridges (22.5 percent) are either "structurally deficient" or "functionally obsolete." On the other hand, Oregon's bridge infrastructure compares favorably to Indiana's. Oregon's inventory is a 9,407-bridge network, with 1,774 in bad condition (18.9 percent). Indiana, in addition, has far more public-use road miles than Oregon: 97,289 miles compared to 57,262 miles (Figure 17). Three in ten (28.6 percent) public road miles are located in urban areas in Indiana compared to just two in ten (21.7 percent) in Oregon. A larger bridge and road network and a greater share of roads in densely-populated cities contribute toward higher user costs for Indiana infrastructure.

Demand for vehicular infrastructure is also significantly greater in Indiana than Oregon (Figure 17). There are 5.4 million driver's licenses issued in Indiana to Oregon's 2.8 million and Indiana motorists travel 78.9 billion miles compared to Oregon's 33.2 billion. At 4.3 billion gallons, Indiana drivers consumed 2.3 billion more gallons of fuel than their counterparts to the

northwest. Moreover, more workers commuted to work in a car, truck, or van in Indiana (92.8 percent) than in Oregon (85.4 percent). The high demand by workers and families for Indiana's road network, paired with the related need to improve and expand the infrastructure to reduce commuter congestion, contributes toward higher proposed user rates.

Figure 16: Number and Quality of Bridges, Indiana vs. Oregon



Sources: "2010 Report Card for America's Infrastructure: Indiana" and "2010 Report Card for America's Infrastructure: Oregon" by the American Society of Civil Engineers.

Figure 17: Infrastructure, Usage, and Method of Commute to Work, Indiana vs. Oregon

Roads, Usage, and Methods	Indiana	Oregon
<i>Infrastructure</i>		
Total Public Road Miles, 2012	97,289	59,262
Rural	71.4%	78.3%
Urban	28.6%	21.7%
<i>Usage</i>		
Driver's Licenses, 2012	5.4 million	2.8 million
Vehicle Miles Traveled, 2012	78.9 billion	33.2 billion
Total Motor Fuel Gallons, 2012	4.3 billion	2.0 billion
<i>Method of Commute to Work</i>		
Car, Truck, or Van	92.8%	85.4%
Public Transit	1.0%	4.2%
Mean Travel Time to Work	22.6 minutes	22.2 minutes

Sources: "Highway Statistics Series: Indiana 2012 State Statistical Abstract" and "Highway Statistics Series: Oregon 2012 State Statistical Abstract" by the U.S. Department of Transportation Federal Highway Administration; "Selected Economic Characteristics" by the 2013 American Community Survey, 3-Year Estimates.

Indiana is an intermodal hub. Indiana's comprehensive rail network is the 9th-largest in the nation with over 4,000 miles of railroad. Oregon, by contrast, ranks 30th in the nation with 2,395 rail miles (Figure 18). Accordingly, Indiana transports significantly more freight than Oregon.

Indiana's ports receive 56.5 million short tons of cargo, the 14th-most in the nation, compared to Oregon's 26.9 million short tons. To meet this demand, the Indiana economy comprises 3,363 business establishments in the "truck transportation" industry which employ 52,783 truckers and workers. By contrast, there are only 1,608 trucking establishments in the State of Oregon. Moreover, 18.6 percent of the Indiana workforce is employed in "production, transportation, and material moving" jobs compared to just 12.2 percent in Oregon.

Figure 18: Logistics and Freight Sectors, Indiana vs. Oregon

Logistics and Freight	Indiana	Oregon
<i>Rail</i>		
Railroads, 2012	4,075 miles	2,395 miles
State Rank	9 nd	30 th
<i>Ports</i>		
Short Tons of Cargo, 2012	56.5 million	26.9 million
State Rank	14 th	24 th
<i>General Freight Trucking</i>		
Trucking Business Establishments, 2012	3,363	1,608
Trucking Employees, 2012	52,783	17,735
<i>Occupation</i>		
Production, Transportation, and Material Moving Jobs	544,719	212,396
Share of Total Employment in State	18.6%	12.2%

Sources: "2010 Report Card for America's Infrastructure: Indiana" and "2010 Report Card for America's Infrastructure: Oregon" by the American Society of Civil Engineers; "2012 County Business Patterns: Geography Area Series" by the U.S. Census Bureau and the U.S. Department of Commerce; and "Selected Economic Characteristics" by the 2013 American Community Survey, 3-Year Estimates.

The flourishing freight transportation sector of the Indiana economy requires a first-class logistics network so that the state continues to be a cost-effective business option to locate to bring products to market or to export goods internationally. The price of supporting the trucking industry, however, is high: one 40-ton truck does as much damage to an interstate highway as 9,600 cars (GAO, 1994). Trucking and freight logistics therefore are a significant reason why the IN-RIDE rates must be higher than Oregon's road usage charges.

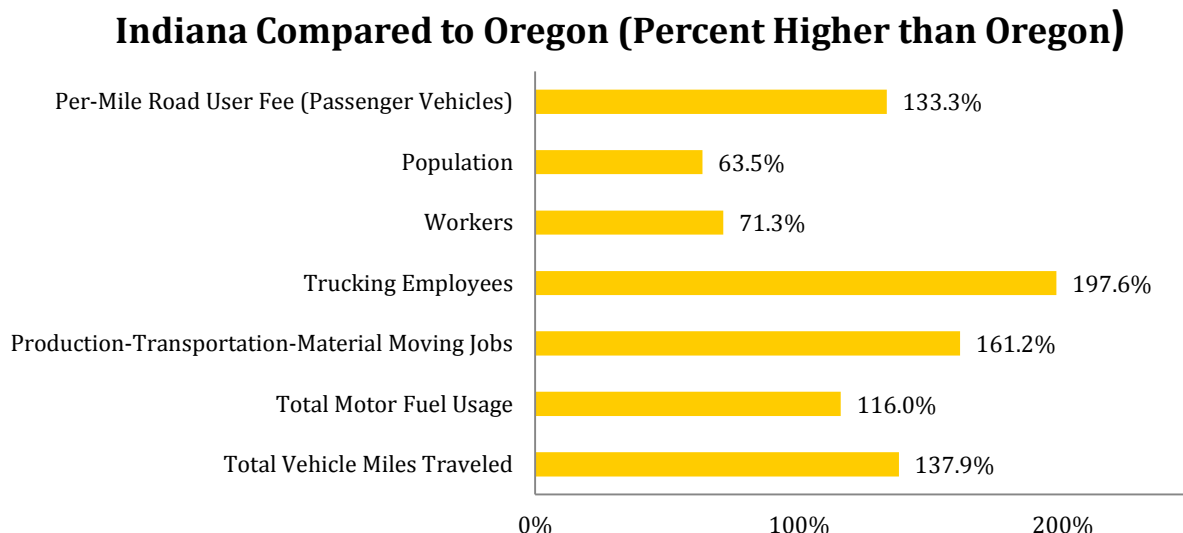
Figure 19 summarizes these findings to demonstrate why Indiana's vehicle miles traveled fees will need to be higher than Oregon's rate. All comparisons are presented as the percentage amount by which Indiana exceeds Oregon. The proposed, full-capacity IN-RIDE fee for passenger vehicles is 2.0 cents greater than Oregon's 1.5-cent rate because:

- Indiana has 63.5 percent more people and 71.3 percent more workers than Oregon;
- Indiana's trucking industry is 197.6 percent larger than Oregon's;
- Indiana has 161.2 percent more workers in "production, transportation, and material moving" occupations, which create and deliver products; and
- Total motor fuel usage and total vehicle miles traveled are respectively 116.0 percent and 137.9 percent higher in Indiana than Oregon.

Finally, over the long run, the increased road user fee faced by Indiana motorists would provide significant benefits. The full capacity IN-RIDE rates would improve the quality of the state's existing infrastructure, reducing back-end personal costs. They also would allow Indiana to expand the network, further increasing the state's economic growth, business competitiveness,

worker mobility, and quality of life. Ultimately, a higher vehicle miles traveled fee promises to be a worthwhile investment for Indiana.

Figure 19: Indiana vs. Oregon, Select Variables, Percentage by Which Indiana Exceeds Oregon



Conclusion: The Benefits of IN-RIDE to Workers, Businesses, and Families

Indiana's transportation infrastructure is barely adequate and continues to deteriorate. Unfortunately, the end of the Major Moves capital program, declining Fuel Tax receipts, and the looming budgetary problems of the federal Highway Trust Fund imperil the long-term revenue sources to maintain and modernize Indiana's system. The Indiana Road Infrastructure and Driver Enhancement (IN-RIDE) program is a solution to these problems.

The IN-RIDE is a fee for each mile traveled by a vehicle that is equal to the damage caused by the vehicle to the infrastructure *plus* costs to invest in future needs. The IN-RIDE allows individuals to choose their pay-as-you-go plan, for which they are billed every month, quarter, or year. Indiana motorists are credited their Fuel Tax contributions in the process. Through an innovative public-private partnership framework, the IN-RIDE protects personal privacy, promotes in-state infrastructure investment, and supports "high-road" economic development in Indiana.

The fees required to both bring Indiana's system up to par and invest in a modern world-class transportation network are 3.5 cents per mile for passenger vehicles and single unit trucks and 4.5 cents per mile for multiple unit trucks and buses. Under these "full capacity" rates, the state is conservatively expected to generate an additional \$1.46 billion in annual funds. After distribution to freight mobility projects, state highway infrastructure, and local roads and streets, this additional funding could potentially support at least 100,000 new jobs over 25 years and grow the economy by over \$11 billion. Full capacity funding would reduce traffic congestion and would increase worker-to-firm connectivity.

The benefits of the road user fee are substantial. The IN-RIDE is a fiscally-responsible policy that maintains an adequate, predictable, and sustainable revenue stream every single year. By making those who actually drive on the roads pay for their usage, the IN-RIDE also promotes

taxpayer fairness, keeping money in the General Fund to pay for other public goods like schools, fire departments, and police departments. Moreover, in promoting the stability of infrastructure funds, the IN-RIDE encourages businesses to locate in Indiana because they can be certain that their products and services will be efficiently and predictably delivered to the market. Finally, the IN-RIDE is an innovative method of finance that will be used to build a modern system to fit the needs of future generations.

Indiana has reached a crossroads. The state can continue down the path of unsustainable funding and low-quality infrastructure, or it can be a global leader in smart, world-class infrastructure investment policies that grow the economy. The Indiana Road Infrastructure and Driver Enhancement program allows the state to choose the second path of transit modernization, congestion alleviation, safety improvements, and economic development. The Indiana Road Infrastructure and Driver Enhancement proposal should be implemented.

Appendix: Answers to Five Questions about the Proposed IN-RIDE

Question 1: Why now?

Answer 1: State government cannot *plan* the future Indiana economy. Technological innovations and private consumer demand are the forces that will shape the market of tomorrow. State government, however, can *prepare for* the future based on consumption trends. The fuel economy of cars purchased by Indiana residents has risen substantially in the past decade, and this trend is expected to continue as CAFE standards rise and alternative fuel vehicles become more prevalent. Meanwhile, passenger vehicles are increasingly equipped with GPS capabilities. In addition, the *Blue Ribbon Panel on Transportation Infrastructure* noted that “[d]igital technology now allows for methods of transporting people and goods that are connected, coordinated, shared, driverless, tailored, and electrical” (Ellspermann & Langham et al., 2014). The technology exists to implement a true user-pays fee that both improves Indiana’s current infrastructure system and invests in a transportation network that serves the economy of the future.



Question 2: Will Indiana residents evade fee payments or tamper with the devices?

Answer 2: Research from the Oregon pilot programs has found that the potential for evasion is minimal (Whitty, 2007). Hefty evasion fees and penalties for tampering with in-vehicle equipment can also deter those from paying less than their fair share. MEPI and the IIFFC suggest license revocation for those who do not pay their IN-RIDE bills in the past 12 months.

With respect to anti-tampering, private vendors can select from a range of measures to prevent motorist fraud. If a private firm decides to collect information each year in annual vehicle tests, they could use tamper-evident tape on the device and perform error checks (Whitty & Capps, 2014). Devices can also record when they are installed, removed, turned on, and turned off. Odometer tampering has been a cause of fraud in the past, but modern vehicles have integrated electric odometer systems with tamperproof technologies. Ultimately, much of these concerns

will be addressed in the bidding process, with the initial Request For Information (RFI) revealing the technologies that interested firms have at their disposal to deal with cheaters.

Question 3: How will out-of-state visitors pay their fair share?

Answer 3: Unfortunately, current technology is unable to force non-Hoosier motorists to pay the IN-RIDE. Out-of-state residents, however, will continue to pay the in-state Fuel Tax at the pump. Thus, this policy would not result in a net loss of out-of-state fees. Additionally, given that Indiana residents will receive Fuel Tax credits on their monthly bill, the IN-RIDE may make it politically feasible to raise the gas tax— which would raise additional revenues from out-of-state drivers and have no impact on total revenues from in-state workers, but would increase the monthly rebate to Indiana motorists. Finally, as the first state to fully adopt a road user fee, Indiana would lead by example in the region. When Indiana’s neighbors follow this example, the state could enter into regional agreements to charge all motorists per mile. Evidence from Oregon’s second pilot program demonstrates that the policy is scalable to a regional system (Whitty & Capps, 2014). Note that the Indiana, Illinois, Iowa Foundation for Fair Contracting has also proposed the I-RIDE (Illinois Road Improvement and Driver Enhancement) program in Illinois and the two policies could eventually be coordinated and integrated, if desired (Manzo & Poulos, 2014).

Question 4: If private vendors serve as collection agents and are only tasked with remitting funds to the state, how can the public trust that they will not steal or distribute less money than they receive?

Answer 4: The first measure to defend vendor fraud and abuse is in the initial public procurement process. The IN-RIDE Commission is to select the lowest *responsible* bidder(s) to administer the program. Detailed financial information and an extensive background check will be required of all companies that submit a bid. Second, the IN-RIDE Commission will be required to conduct vendor audits every few months, using a representative sample of invoices (i.e, at least 1,000), to ensure compliance. In this sense, the state government will in fact have access to some motorists’ movements through these randomly-selected invoices, but such access will be temporary and used only for program transparency and accountability. By law, these personalized invoices will be deleted and destroyed after 12 months.

Question 5: Since fuel-efficient automobiles consume fewer gallons of gasoline, those who own or rent an alternative fuel vehicle actually pay less in Fuel Taxes, providing an incentive to be environmentally-friendly. Will the IN-RIDE eliminate this incentive?

Answer 5: Currently, those motorists in vehicles with better fuel economy pay less to use Indiana roads than those in fuel-inefficient automobiles, even though they cause the same amount of damage to the actual infrastructure. The IN-RIDE policy is intended to address this discrepancy in revenue contributions, especially as more and more cars become fuel-efficient. Most legislators and Hoosiers will understand that it costs \$350 to drive 10,000 miles in one year. Consumers mainly buy fuel efficient vehicles to stop paying \$2 to \$3 per gallon for the price of fuel, not to save 17 or 18 cents per gallon in fuel taxes.

However, there are at least three possible policy solutions to ensure that consumers are encouraged to be environmentally-friendly. First, a designated portion of IN-RIDE funds can be

utilized to invest in infrastructure that supports alternative fuel vehicles (e.g., increasing the number of plug-in locations for electric-powered vehicles). Second, some IN-RIDE funds can be used to give a tax credit directly to the consumer at the dealership if they purchase an alternative fuel vehicle.



Third, a separate, reduced IN-RIDE rate could be added to the proposed schedules on Pages 12 and 13 for fuel-efficient vehicles. MEPI and the IIFFC recommend the first of these options (at least initially) because it immediately helps to improve Indiana's infrastructure inadequacies and the latter two would only add to the policy's administrative complexity at the start. Finally, once motorists are billed for every mile driven and their individual contributions to infrastructure damage are quantified, some may choose to in fact drive fewer miles. An itemized bill thus might help to improve Indiana's environmental quality (CBO, 2011).

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