BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

IN THE MATTER OF:	)	
	)	R24-17
PROPOSED CLEAN CAR AND	)	(Rulemaking – Air)
TRUCK STANDARDS	)	
PROPOSED 35 ILL. ADM. CODE 242	)	

NOTICE OF FILING

TO: Persons on Attached Service List

PLEASE TAKE NOTICE THAT on the 21st day of January 2025, the undersigned electronically filed with the Clerk of the Illinois Pollution Control Bard, via the "COOL" System, Indiana, Illinois, Iowa Foundation For Fair Contracting's Pre-Filed Testimony of Mary Tyler in Opposition of Rule Proponents' Regulatory Proposal on behalf of the Indiana, Illinois, Iowa Foundation for Fair Contracting, true and correct copies of which are attached hereto and hereby served upon you.

INDIANA, ILLINOIS, IOWA
FOUNDATION FOR FAIR
CONTRACTING

DATE: January 21, 2025

By: /s/ *Kara M. Principe*

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CERTIFICATE OF SERVICE

I, Kara M. Principe, Counsel for the Indiana, Illinois, Iowa Foundation for Fair Contracting, caused to be served on this 21st day of January 2025, a true and correct copy of the Indiana, Illinois, Iowa Foundation for Fair Contracting's Pre-Filed Testimony of Mary Tyler in Opposition of Rule Proponents' Regulatory Proposal upon the persons listed on the Service List via electronic mail or electronic filing, as indicated.

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BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

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PRE-FILED TESTIMONY OF MARY TYLER
IN OPPOSITION OF RULE PROPONENTS' REGULATORY PROPOSAL

The Indiana, Illinois, Iowa Foundation for Fair Contracting ("IIIFFC"), by and through counsel, hereby submit the following Pre-Filed Testimony of Mary Tyler in opposition of Sierra Club, Natural Resources Defense Council, Environmental Defense Fund, Respiratory Health Association, Chicago Environmental Justice Network, and Center for Neighborhood Technology (collectively, "Rule Proponents") regulatory proposal for presentation at the March 10-12 hearing in the above captioned matter.

TESTIMONY OF MARY TYLER

I. QUALIFICATIONS

My name is Mary Tyler. I am Policy Director at the IIIFFC and a transportation analyst with the Illinois Economic Policy Institute ("ILEPI"). I have 12 years of experience in the field of urban planning, transportation infrastructure policy, and public funding mechanisms. I earned a Master of Urban Planning and Graduate Certificate in Transportation Planning from Texas A&M University and a Bachelor of Science in Mathematics and Economics from the University of Evansville. I am an American Institute of Certified Planners (AICP) certified planner through the American Planning Association. Prior to joining the IIIFFC, I served for 3 years as the Transportation Director at ILEPI. I had previously been the Transportation Policy Analyst with

ILEPI, the Coordinator for the Victoria, TX Metropolitan Planning Organization, and the Senior Transportation Planner for the City of Victoria, TX.

II. PURPOSE OF TESTIMONY

I provide this pre-filed testimony in opposition of Illinois' adoption of the Advanced Clean Cars II (ACC II), Advanced Clean Truc (ACT), and Heavy-Medium Duty Low NOx Omnibus (Low-NOx) regulations (collectively referred to as the "Clean Car and Truck Standards" or "Rules") by adding a new code section, 35 Ill. Admin Code 242, to the Illinois Administrative Code. I oppose the adoption of the Proposed Rules because, as described in detail below, Illinois' primary source of transportation infrastructure will be adversely impacted by the increased use of electric vehicles ("EV") as encouraged by the rules. This will have a deleterious effect on state transportation revenue, affecting the and safety of, and investment into, the state's roadways, bridges, and transit as well as cost the state thousands of jobs.

My testimony incorporates the following publications:

- Tyler, M., *The Impact of Electric Vehicles and Increased Fuel Efficiency on Transportation Funding,* Illinois Economic Policy Institute (Jan. 2023).
- Tyler, M., *Illinois Transportation Revenues, Expenditures, & Projects: An Analysis of Rebuild Illinois & Past Funding,* Illinois Economic Policy Institute (Jul. 2022).
- Tyler, M., *Infrastructure Investment and Jobs Act: Transportation Funding Summary for Illinois,* Illinois Economic Policy Institute (Mar. 2022).
- Tyler, M., et al., *COVID-19 and Transportation Funding in Illinois,* Illinois Economic Policy Institute (May 2020).
- Tyler, M. (previously Craighead, M.), *Forecasting Bumpy Roads Ahead: An Assessment of Illinois Transportation Needs,* Illinois Economic Policy Institute (Apr. 2018).
- Manzo, F., and Bruno, R., *Policies That Support Employment: Investments in Public Education, Investments in Public Education, Investments in Public Infrastructure, and a Balanced State Budget,* Illinois Economic Policy Institute and the Project for Middle Class Renewal at University of Illinois at Urbana-Champaign (Sep. 2015).

III. ADVERSE EFFECTS ON TRANSPORTATION FUNDING

The Proposed Rules will increase the rate at which EVs are utilized in Illinois, negatively impacting the most significant form of transportation funding, the motor fuel tax ("MFT"). Illinois' state transportation funding is largely generated from a combination of user fees, including the MFT, vehicle registration fees, certificate of title fees, and driver license fees.[1] Data from the Illinois Comptroller shows that revenue from the MFT generated 57% of total transportation revenues in fiscal year 2024, totaling $2.8 billion for the year.[2] A past ILEPI report shows that the MFT only accounted for 52% of total transportation revenue in fiscal year 2021, thus indicating the growing importance of revenue from the MFT.[3]

Source	FY24 Revenue	FY24 Revenue Dedicated to Transportation	% of Total Transportation Revenue
Motor Fuel Tax	$2,818,173,852	$2,818,173,852	57%
Vehicle Registrations	$2,036,204,531	$1,819,746,743	37%
Certificate of Title Fees	$340,992,114	$233,272,182	5%
Driver License Fees	$92,357,954	$33,280,179	1%
Total	$5,287,728,451	$4,904,472,956	100%

Source: Author's analysis of data from Illinois Comptroller. *Revenues: State Income by Revenue Source*. January 2025

The Proposed Rules would require 100 percent zero-emission passenger vehicle sales by 2035 and set fleet standards and incentives to dramatically increase the proportion of electric medium- and heavy-duty vehicles in Illinois. The ACC II rule would result in up to 1.4 million zero-emission vehicles (ZEVs) on Illinois roads by 2030, exceeding the Climate and Equitable Jobs Act (CEJA) goal.[4] Proponents project that adopting the Proposed Rules will result in a 92

[1] Tyler, M., *Illinois Transportation Revenues, Expenditures, & Projects: An Analysis of Rebuild Illinois & Past Funding*, Illinois Economic Policy Institute (Jul. 2022).
[2] Illinois Department of Revenue (IDOR). *Monthly Collections Remitted to the State Comptroller FY2024*, https://tax.illinois.gov/research/taxstats/collectionscomptroller.html (last accessed Jan. 17, 2025).
[3] Tyler, M., *The Impact of Electric Vehicles and Increased Fuel Efficiency on Transportation Funding,* Illinois Economic Policy Institute (Jan. 2023).
[4] Rule Proponents' Proposed Clean Car and Truck Standards: 35 Ill. Amin Code Part 242 (hereinafter "Proposed Rule"), p. 18; Proposed Rule, Exhibit 4.

percent zero emitting light-duty vehicle fleet and a 56 percent zero-emitting medium- and heavy-duty fleet by 2050.[5]

As stated above, the Proposed Rules are expected to surpass the goal of one million EVs in Illinois by 2030 as set under CEJA.[6] ILEPI's analysis of CEJA's goal and the impact of increased vehicle fuel efficiency indicated a significant fiscal impact on state transportation revenues, which would be even higher if the Proposed Rules are adopted. A 2022 ILEPI report estimated that between 2021 and 2030, Illinois will lose $765 million if one million EVs are adopted. This is the result of 2 billion gallons of fuel no longer subject to the state MFT. Combined with the estimated improved vehicle fuel efficiency over this same timeframe, the state is estimated to lose a combined $4 billion in motor fuel tax revenue. [7]

While existing EV owners currently pay an annual fee of $100 to offset the lost revenue from the MFT, our calculations indicate it is not enough. An average driver travels 10,847 miles annually. With the average fuel efficiency for light-duty vehicles in 2022 at 24.8 miles per gallon, we can calculate that an average driver uses 437 gallons per year.[8] Multiplying this by the current state MFT of $0.47 per gallon means that the average driver should be contributing $205 to transportation revenues from motor fuel taxes. As such, the average EV driver is shorting transportation funds by at least $105 every year. This amount would be higher if this calculation also took into account the lost revenue from the sales tax on motor fuels, which also supports transportation funding in Illinois.

[5] *Id*. at Exhibit 4.
[6] 20 ILCS § 627/45. Climate and Equitable Jobs Act, 2021 Ill. Legis. Serv. P.A. 203-662 (West).
[7] *Id*.
[8] Federal Highway Administration. *Highway Statistics 2022: Annual Vehicle Distance Traveled in Miles and Related Data*, Feb. 2024, https://www.fhwa.dot.gov/policyinformation/statistics/2022/vm1.cfm. (last accessed Jan. 8, 2025).

Given these figures, it is problematic that in their Rule, Proponents offer no alternative for the loss in transportation funding revenue.

IV. POORLY MAINTAINED AND UNSAFE INFRASTRUCTURE

The adoption of the Proposed Rule will have a deleterious effect on transportation funding, affecting the viability of transportation infrastructure investment, resulting in poorly maintained infrastructure, unsafe roads, bridges, and transit systems, and an inefficient transportation system.

Prior to Rebuild Illinois – Illinois' 2019 capital bill – the state faced a massive backlog of infrastructure maintenance needs with important projects being deferred due to insufficient funding. Specifically, research showed that Illinois required $4.6 billion per year to bring all roads, bridges, and transit systems into a state of good repair.[9] While Illinois' transportation system maintenance and modernization needs were partially addressed under revenue increases within Rebuild Illinois, improved vehicle fuel efficiency and the increased reliance on EVs will present a longer-term fiscal challenge for policymakers. This will only be exacerbated by the Proposed Rules without any changes to address lost transportation revenue.

Despite advancements under Rebuild Illinois, the state is still currently facing infrastructure maintenance backlogs, which is expected to increase if revenue is impacted by the adoption of the Proposed Rules. Specifically, the proportion of roads considered in "poor" condition has stayed the same since 2019, currently hovering around 18% of total miles of roadway.[10] Additionally, 9.3% of all bridges in Illinois – or 2,517 – are considered "structurally

[9] Tyler, M. (formerly Craighead, M.), *Forecasting Bumpy Roads Ahead: An Assessment of Illinois Transportation Needs,* Illinois Economic Policy Institute (Apr. 2018).
[10] Illinois Department of Transportation (IDOT). *Condition Rating Survey Summary Report FY2023* (Dec. 2023), https://idot.illinois.gov/content/dam/soi/en/web/idot/documents/transportation-system/reports/opp/travel-stats/FY2023_CRS_Summary%20Report.pdf (last accessed Jan. 9, 2025).

deficient," with the number of total bridges with this classification growing in the last five years. In 2024, the state identified over 4,000 bridges that are in need of repair, with several existing bridges in Illinois built in the 1960s.[11] IDOT states in its 2023 Transportation Asset Management Plan ("TAMP") that some of the "State of Acceptable Condition" targets identified, which evaluate state road and bridge conditions, are not anticipated to be met in the next decade due to funding constraints. They estimated that the state requires $2.3 billion more to achieve all performance targets.[12] And ultimately, all of these needs can add up to poorly maintained transportation systems filled with potholes, narrow bridges, unsafe intersections, and significant congestion.

Decreased revenue from the MFT due to the Proposed Rule will also impact transit systems statewide, as portions of MFT revenue is dedicated to capital funding for transit systems. Under Rebuild Illinois, a portion of the funding generated due to MFT increases is distributed to two specific transit capital funds. Approximately 11% of new MFT revenue under Rebuild Illinois is dedicated to the Chicago transit systems for transit infrastructure improvements.[13] In fiscal year 2024, the Chicago transit systems – Chicago Transit Authority, Metra, and Pace Bus – received $272 million from MFT revenues under the RTA Capital Improvement Fund. Downstate transit agencies received $30 million under the Downstate Mass Transportation Capital Improvement Fund.[14] As the Proposed Rules will result in reduced MFT revenue, that

[11] American Road & Transportation Builders Association, *National Bridge Inventory: Illinois*, 2024. https://artbabridgereport.org/exports/ARTBA%202024%20Bridge%20Report%20-%20Illinois.pdf (last accessed Jan. 9, 2025).
[12] Illinois Department of Transportation. *Transportation Asset Management Plan*, Jan. 2023. https://idot.illinois.gov/content/dam/soi/en/web/idot/documents/transportation-system/reports/opp/transit/idot-2022-tamp-fhwa-certified-01-24-23.pdf (last accessed Jan. 9, 2025).
[13] Illinois Economic Policy Institute. *Funding Breakdown: Transit Agencies*. https://illinoisepi.org/rebuild-illinois/funding-breakdown-transit-agencies/ (last accessed Jan. 9, 2025).
[14] Illinois Comptroller. *Revenues by Fund*. https://illinoiscomptroller.gov/financial-reports-data/revenues-state-income/fund?FundSel=0965&FundGrpSel=0&FundCatSel=0&FundTypeSel=0&GroupBy=Agcy&FY=24&submitted= (last accessed Jan. 9, 2025).

will in turn also impact funding for the vital transit systems that are already facing a massive fiscal shortfall in the year ahead.

Furthermore, decreased revenue from the MFT due to the Proposed Rule will impact local government funding. Portions of the state MFT are distributed to all counties, municipalities, and townships statewide. For fiscal year 2024, from the motor fuel tax revenue, Illinois counties received $350 million, Illinois townships received $159 million, and Illinois municipalities received $490 million.[15] As the Proposed Rules will result in reduced MFT revenue, that will in turn also impact funding for local governments statewide.

V. ADVERSE AFFECTS ON ECONOMIC COMPETITIVENESS AND JOBS

The adoption of the Proposed Rule will negatively impact transportation infrastructure investment, affecting Illinois' economic competitiveness and resulting in a reduction of quality, middle-class jobs. Investing in public infrastructure attracts business activity and creates jobs.[16] Improving and expanding roads, bridges, highways, railroads, and transit systems provide direct jobs to construction workers over the short term and allows businesses to efficiently bring their product to market in the long run. As a result, a one percentage-point increase in the highway share of state expenditures is statistically associated with a 0.39 percentage-point increase in the working-age employment rate.[17] As summarized in the table below, every $1 billion in

[15] Illinois Department of Transportation. *MFT Allotments for Fiscal Year 2024.* *https://idot.illinois.gov/content/dam/soi/en/web/idot/documents/transportation-system/pamphlets---brochures/local-roads/mft/yearly/fiscal-year-2024.pdf* (last accessed Jan. 9, 2025).
[16] Center on Budget and Policy Priorities. "It's Time for States to Invest in Infrastructure." *Center on Budget and Policy Priorities*, 23 Jan. 2023, www.cbpp.org/research/its-time-for-states-to-invest-in-infrastructure (last accessed Dec. 11, 2024).
[17] Frank Manzo IV & Robert Bruno, *Policies That Support Employment: Investments in Public Education, Investments in Public Education, Investments in Public Infrastructure, and a Balanced State Budget*, Illinois Economic Policy Institute & the Project for Middle Class Renewal at University of Illinois at Urbana-Champaign (Sep. 2015).

infrastructure investment boosts the economy by between $1.7 billion and $3.5 billion in Illinois and saves or creates up to 25,000 jobs.[18]

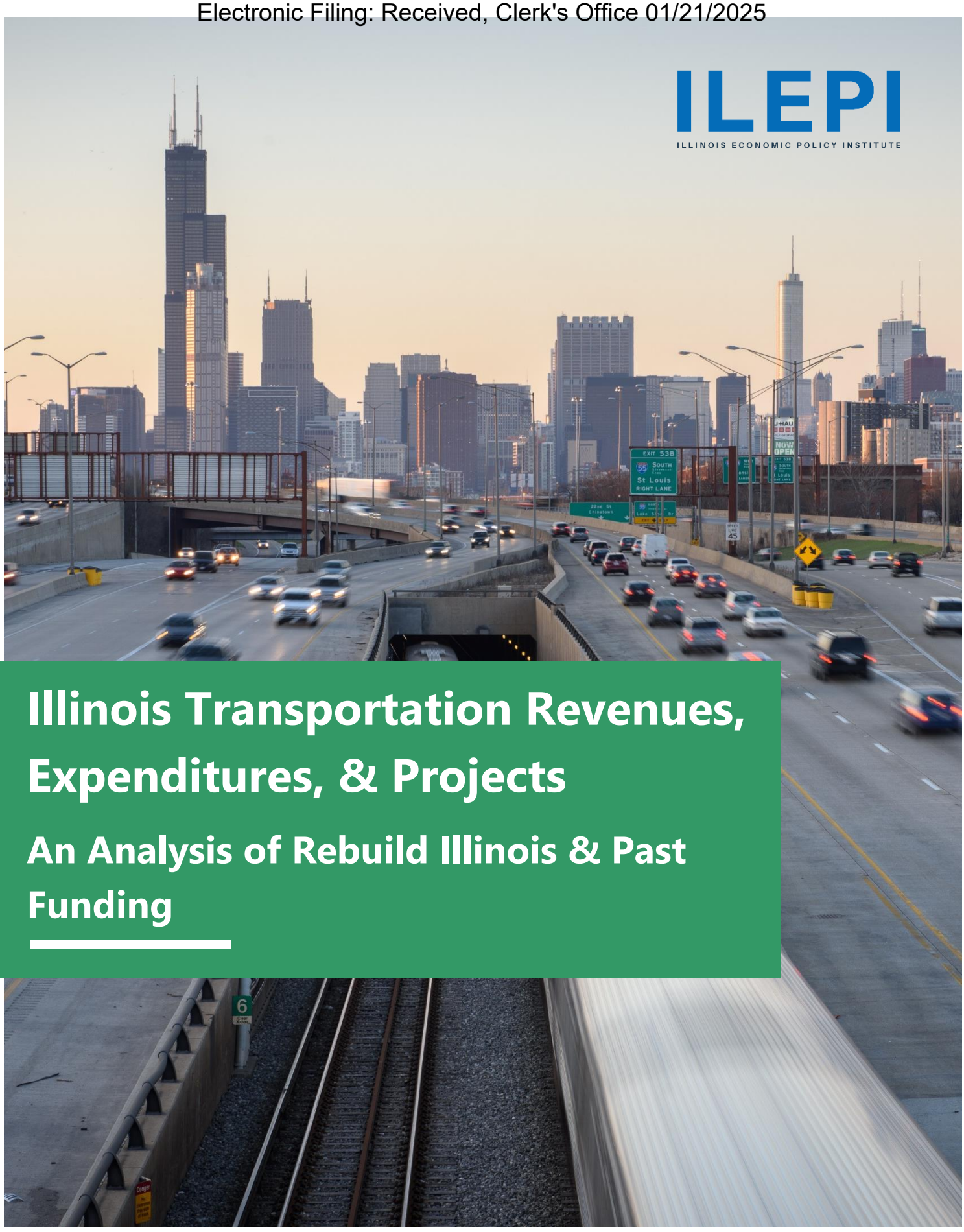
Impact of Investing $1 Billion in Illinois by Type of Infrastructure, 2020 Estimates

Infrastructure Investments in Illinois	Total Jobs	Direct Jobs	Economic Output	Output Multiplier	Income Per Direct Job
Road and Bridge Maintenance	16,300	9,300	$2,297,000,000	$2.30	$68,700
Road and Bridge Construction	8,300	4,500	$1,800,000,000	$1.80	$69,900
Public Transit	24,700	14,800	$3,523,000,000	$3.52	$85,600
Airports	6,700	2,600	$1,736,000,000	$1.74	$125,500
Railroads	7,200	2,200	$2,011,000,000	$2.01	$137,100
Fossil Fuel Electric Power	3,400	700	$1,794,000,000	$1.79	$162,700
Nuclear Power	4,500	1,000	$1,982,000,000	$1.98	$226,200
Solar Power	7,900	3,700	$2,080,000,000	$2.08	$90,500
Wind Power	3,400	800	$1,783,000,000	$1.78	$133,200
Water and Sewer Infrastructure	8,700	3,600	$1,952,000,000	$1.95	$91,900
Power and Communication Lines	3,400	700	$2,080,000,000	$2.08	$175,100
School Construction	11,000	6,700	$1,805,000,000	$1.80	$70,400
Construction of Hospitals	10,200	6,000	$1,781,000,000	$1.78	$67,900

VI. CONCLUSION

With no alternative to the MFT offered by Proponents, I cannot support the Proposed Rule as it will negatively impact transportation revenue for the state, transit agencies, and local governments statewide. This will ultimately lead to poorly maintained infrastructure, and thus an inefficient transportation network with potential safety and congestion issues as well as a reduction of middle-class jobs for the state.

[18] Based on Illinois Economic Policy institute estimates based on IMPLAN, an industry standard economic impact analysis software, https://illinoisepi.org/focus-areas/economic-development/.



Illinois Transportation Revenues, Expenditures, & Projects

An Analysis of Rebuild Illinois & Past Funding

EXECUTIVE SUMMARY

With the passage of the historic Rebuild Illinois capital plan in 2019, Illinois transportation funding has increased substantially. As such, it is important to ensure these revenues are used to invest in transportation projects in a timely manner. The following Illinois Economic Policy Institute (ILEPI) report provides an analysis of Illinois Department of Transportation (IDOT) revenues and expenditures, detailing the distribution of funds and defining state funding accounts. Rebuild Illinois revenues are a focus, including the examination of increased IDOT expenditures following its adoption. Finally, project specific highway construction spending is evaluated to determine distribution across the state.

Four main user fees contribute to regular, continuous annual transportation funding: motor fuel tax (MFT), vehicle registrations (VR), certificate of titles (CT), and driver's license (DL) fees.

- While these are the main sources of transportation funding, portions of the revenue from VR, CT, and DL go to other state funds outside of direct transportation funding.

Total Annual Revenue from Major Transportation Funding Sources*	Source	FY19	FY20	FY21
	Motor Fuel Tax**	$1,359,421,028	$2,312,499,037	$2,381,062,186
	Vehicle Registrations**	$1,468,543,866	$1,519,119,671	$2,144,218,284
	Certificates of Title**	$263,423,906	$314,207,239	$394,982,223
	Driver's Licenses	$98,349,975	$83,257,080	$91,383,084
	Total	$3,189,738,775	$4,229,083,027	$5,011,645,777

* Only portions of vehicle registration, certificate of title, and driver's license fees go directly to transportation funding
** Increased under Rebuild Illinois

Rebuild Illinois resulted in an additional $1.44 billion in FY20 and $1.97 billion in FY21 for transportation funding across the state, generated by increases to the MFT, vehicle registrations, and certificates of title.

- These revenues are distributed between state funds; in FY21, $783 million is estimated for the Road Fund, $567 million for the State Construction Account, $378 million to be distributed to local governments statewide, and $236 million for transit funds.

Additional Revenues due to Rebuild Illinois Fee Increases	Revenue Source	FY20	FY21
	Motor Fuel Tax	$1,179,097,367	$1,259,438,460
	Passenger Vehicle Registrations*	$142,460,657	$474,966,408
	Truck Registrations*	$27,965,708	$89,764,648
	Certificate of Title	$94,547,456	$141,321,029
	TOTAL	$1,444,071,188	$1,965,490,545

* Increase to vehicle registrations did not begin until January 2020 (halfway through FY20), thus the increased revenues from Rebuild IL are not fully realized until FY21

IDOT Highway construction spending increased in FY20 and FY21 compared to pre-Rebuild Illinois.

- The Road Fund (RF) and State Construction Account (SCA) are the primary funds that account for IDOT's administration and annual state highway construction spending.
- Highway construction expenditures as a percent of total RF and SCA expenditures increased from 58% in FY19 to 65% in FY21.
- Between FY19 and FY21, total IDOT expenditures from the RF and SCA – including administration, construction, and otherwise – increased 23%, while highway construction expenditures increased 38%.

FY20 and FY21 expenditures are compared to estimated Rebuild Illinois revenues by fund to provide an analysis of the use of Rebuild Illinois funds, summarized in the table below.

- Road Fund expenditures decreased between FY19 and FY20, yet it is estimated that Rebuild Illinois generated an additional $339 million for FY20, indicating increased funding from Rebuild Illinois dedicated to the Road Fund was not spent in FY20.
- IDOT only expenditures increased by $65 million in FY21 compared to FY19 and total Road Fund expenditures increased by $556 million in the same year; most of this increase can be attributed to a loan made to the GRF from the Road Fund totaling $400 million. It was estimated the Road Fund received an additional $783 million in FY21, indicating this funding is not being spent.
- State Construction Account expenditures for both FY20 and FY21 compared to FY19 exceeded estimated new Rebuild Illinois revenues, indicating those funds are being appropriately spent.
- Newly created transit funds have zero expenditures for FY20 and only $63 million for FY21; this is much below estimated Rebuild Illinois revenues.

	Fund	FY20		FY21	
		Expenditures Increase over FY19	Estimated Rebuild IL Revenues	Expenditures Increase over FY19	Estimated Rebuild IL Revenues
Actual Expenditures compared to Rebuild IL Revenues by Fund	Road Fund (includes all agencies)	-$71,103,579	$339,609,386	$556,409,112	$783,349,923
	Road Fund (IDOT expenditures only)	-$206,445,526	$339,609,386	$65,470,354	$783,349,923
	State Construction Account (IDOT expenditures only)	$610,871,715	$530,141,665	$609,488,430	$567,427,498
	RTA Capital Improvement Fund	$0	$198,803,124	$63,459,590	$212,785,312
	Downstate Mass Transportation Capital Improvement Fund	$0	$22,089,236	$0	$23,642,812

Rebuild Illinois increased funding for two bond funds. Analysis indicates that some Rebuild Illinois Projects have begun, yet there remains a significant amount of funding that has yet to be released.

- Transportation Bond Series A saw an increase of $6.5 billion in bonding authority, of which $610 billion was released to projects in FY20 and $1 billion was released to projects in FY21.
- The Multimodal Transportation Bond was newly created and authorized $4.5 billion, of which $1.5 billion was released to projects in FY20 and $1.8 billion was released to projects in FY21.
- The largest increase in expenditures was in grants to local governments under Transportation Bond Series A, totaling $1 billion between FY20 and FY21.

A project programming and spending analysis determined the distribution of highway construction spending. IDOT District 1 accounts for the largest percent.

- District 1 projects summarized in IDOT's Multi-Year Programs (MYPs) account for between 35% and 43% of total IDOT programming each year, averaging 40% annually for FY09-12 to FY22-27.
- District 1 comprises between 31% to 51% of total construction spending statewide when analyzing IDOT letting data, averaging 38% annually for 2009 to 2021.
- District 1 accounts for 66% of Illinois' total population and 55% of Illinois' annual vehicle miles of travel (AVMT); it is estimated to generated 53% of the state's MFT revenue.

A discrepancy in MYP funding should be explored further.

- After manually entering every project of MYPs between FY09-14 and FY22-27, it was discovered that this project total does not equal the total referenced in the introduction of each document.
- Since the FY17-22 MYP, the discrepancies are close to or greater than $1 billion, with FY20-25 greater than $2 billion.

REVENUE

OVERVIEW OF IDOT REVENUES

State transportation funding is generated from a combination of user fees and bonding that is managed by the Illinois Department of Transportation (IDOT). The user fees – motor fuel tax (MFT), vehicle registrations, certificate of title fees, and driver's licenses – contribute to regular, continuous annual funding.

Motor Fuel Tax

The motor fuel tax is the most significant transportation funding source for Illinois, generating $2.4 billion in Fiscal Year (FY) 2021. The MFT was increased in 2019 under Rebuild Illinois and, at the same time, was tied to inflation to be increased each July 1. The rate is raised by an amount equal to the percentage increase in the CPI-U.

The distribution of the MFT is complicated, ultimately supplying funds to state transportation accounts, local governments, and transit agencies. Figure 2 (next page) illustrates this distribution. The revenues from the Rebuild Illinois increases are deposited into the Transportation Renewal Fund (TRF), while revenue from the rates prior to this increase go to the Motor Fuel Tax Fund. These dollars are then dispersed – based on formulas – between state funds and local governments. Additionally, revenue from the TRF support two transit funds that were newly created under Rebuild Illinois.

Vehicle Registration, Certificate of Titles, and Driver's License Fees

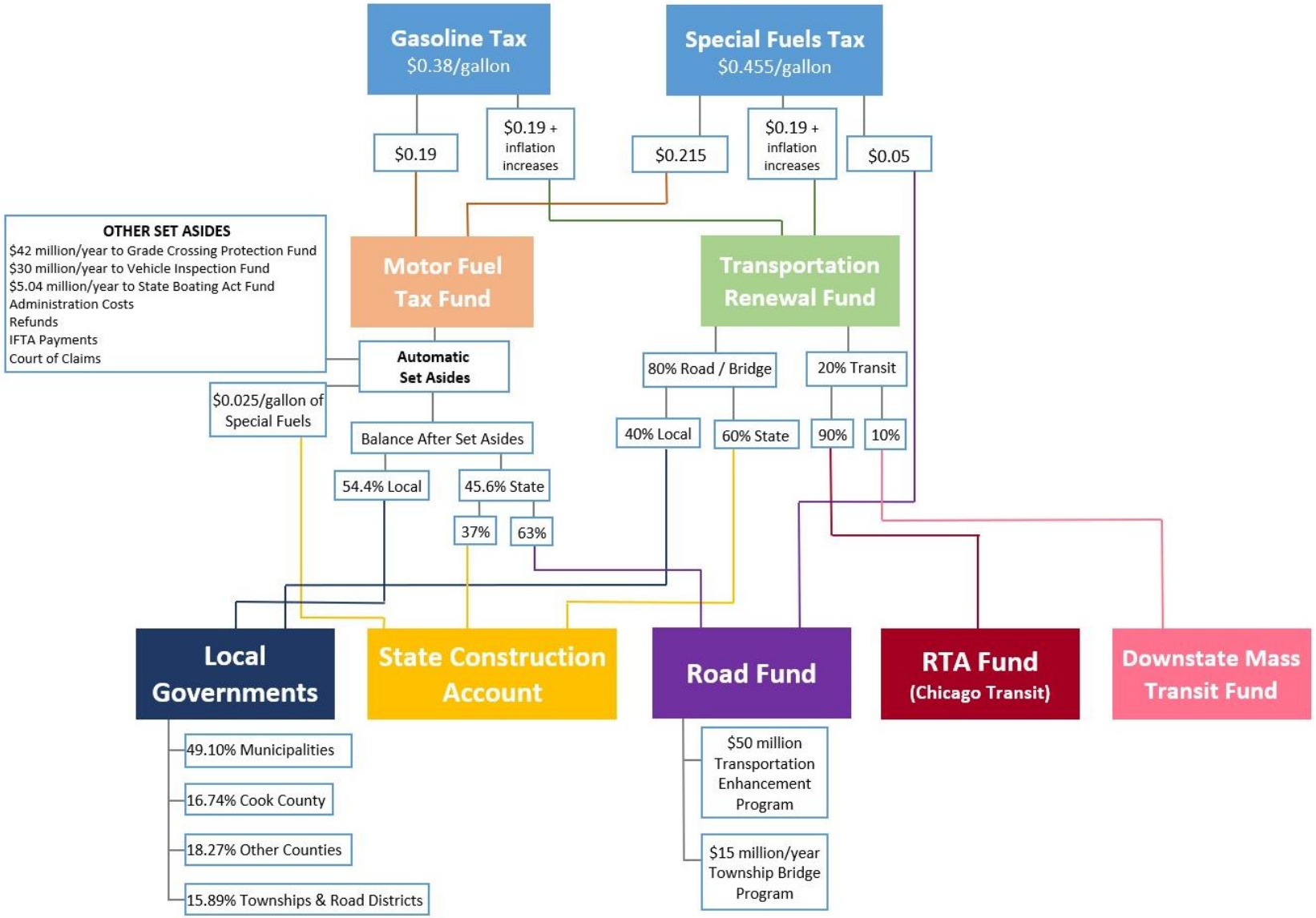
The distribution of funds from other user fees are more simplistic. Figure 1 summarizes the current rates and distribution for vehicle registrations, certificate of titles, and driver's license fees. Both vehicle registrations and certificates of title were increased under Rebuild Illinois, and the majority of their total funding supports the Road Fund and State Construction Account. Conversely, only a small portion of driver's license fees directly support transportation funding, with only 36% – or $33 million – of total revenues from FY21 going to the Road Fund and State Construction Account.

Figure 1: Summary of Transportation Funding Sources and Distribution to State Funds

Revenue Source	**Current Rate**	**Distribution of Funds** (example for standard registration, title, license, may vary slightly for different types)	**FY21 Total Revenues**
Vehicle Registrations (passenger, trucks, & others)	$151 passenger vehicles $251 electric vehicles $41 motorcycles $78-$102 RV $118-$2,890 trucks, depending on type and weight	$49 to Road Fund $20 to Capital Projects Fund $1 to State Police Fund $1 to Secretary of State Special Services Fund $2 to Park and Conservation Fund Remaining between Road Fund (63%) and State Construction Account (37%) <u>Trucks</u> Increases under Rebuild IL to Road Fund Remaining between Road Fund (63%) and State Construction Account (37%)	$2,144,218,284
Certificates of Title	$150 original title $50 duplicate title $250 RV title	$80.24 to Road Fund $17.76 to State Construction Account $30 to Capital Projects Fund $4 to Motor Vehicle License Plate Fund $2.60 to Park and Conservation Fund $0.65 to Illinois Fisheries Management Fund Remaining to General Revenue Fund	$394,982,223
Driver's Licenses	$0-$30 based on age	$20 to Capital Project Fund $5 to Drivers Education Fund Remaining between Road Fund (63%) and State Construction Account (37%)	$91,383,084

Sources: CGFA, 2021 (rates/distribution); Illinois Comptroller, 2021b (Revenues)

Figure 2: Distribution of Motor Fuel Tax Revenues



Source: Author's analysis of Illinois Motor Fuel Tax Law (35 ILCS 505)

REBUILD ILLINOIS REVENUES

The Rebuild Illinois capital bill included fee increases to the motor fuel tax (MFT), vehicle registrations, and certificates of title, which all contribute to annual transportation funding used by IDOT. The capital bill also included a sizeable bonding component, to provide a one-time capital funding for road, transit, and other transportation projects statewide. The following section summarizes the major changes in transportation funding under Rebuild Illinois and actual revenues collected in FY20 and FY21.

In total, these fee increases resulted in an additional $1.44 billion in FY20 and $1.97 billion in FY21 for Illinois transportation funding, as summarized in Figure 3. The majority is from the increase to the MFT, resulting in an additional $1.18 billion for FY20 and $1.26 billion for FY21. Passenger vehicle registration increases ultimately provided an additional $475 million in FY21, while truck registrations generated an additional $90 million in the same year. Lastly, certificate of title fee increases garnered approximately $141 million in FY21.

Figure 3: Additional Revenue Collected as a Result of Rebuild Illinois Fee Increases

Revenue Source	Change Under Rebuild IL	FY20 (July 2019 – June 2020)	FY21 (July 2020 – June 2021)
Motor Fuel Tax*	Gasoline taxes increased by $0.19/gallon Special fuel taxes increased by $0.24/gallon Both rates indexed to inflation increasing each subsequent year	$1,179,097,367	$1,259,438,460
Passenger Vehicle Registrations**	Increased by $50; electric vehicles increased to match standard registration rate and added additional $100 annual fee	$142,460,657	$474,966,408
Truck Registrations**	Increased by $100	$27,965,708	$89,764,648
Certificates of Title	Standard title increased $55 Motor homes and camper titles increased $155 Duplicate titles decreased $45 Salvage titles increased by $16 Junking titles increased $10, then returned to $0 starting in FY21	$94,547,456	$141,321,029
	TOTAL	$1,444,071,188	$1,965,490,545
* Calculated using gallons sold and former MFT rates compared to new revenues as reported to the IL Dept. of Revenue.			
** Increase to vehicle registrations did not begin until January 2020 (halfway through FY20), thus the increased revenues from Rebuild IL are not fully realized until FY21.			

Sources: Author's analysis using IDOR, 2021a (2020/2021 MFT Revenue); IDOR, 2021b (gallons taxed); IDOR, 2021c (MFT rates); Illinois Comptroller, 2021b (registrations and titles)

Figure 4 summarizes the estimated distribution of this new revenue by state fund. This is calculated using the distribution formulas laid out in state statute and reported revenues. Specifically, the Road Fund received an additional $340 million in FY20 and $783 million in FY21, collecting funds from increases to vehicle registrations, certificates of title, and a portion of the MFT increase. The majority of MFT revenues go to the Transportation Renewal Fund (TRF), which is then distributed between state road construction funds, local governments, and transit funds. As summarized below, the State Construction Account is estimated to receive an additional $530 million in FY20 and $567 million in FY21, coming from the distribution of TRF funds. Local governments received an additional $378 million, while the newly created RTA Capital Improvement Fund and Downstate Mass Transportation Capital Improvement Fund received $213 million and $24 million, respectively, in FY21.

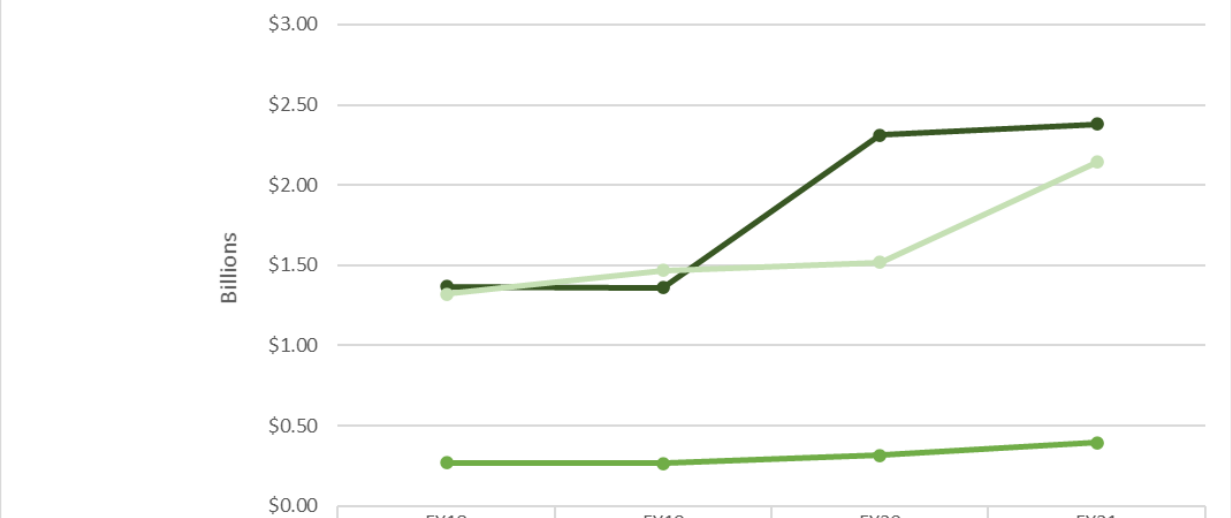
Figure 4: Distribution of New Funding from Rebuild Illinois by State Fund

Fund	Source	FY 2020	FY 2021
Road Fund	$0.05/gallon of special fuel	$74,635,565	$77,297,838
	Passenger vehicle registrations	$142,460,657	$474,966,408
	Truck registrations	$27,965,708	$89,764,648
	Certificate of titles	$94,547,456	$141,321,029
	TOTAL	$339,609,386	$783,349,923
Transportation Renewal Fund (distribution shown below)	Remaining MFT Increases	$1,104,461,802	$1,182,140,621
State Construction Account	Transportation Renewal Distribution	$530,141,665	$567,427,498
Local Governments (multiple funds)		$353,427,777	$378,284,999
RTA Capital Improvement Fund		$198,803,124	$212,785,312
Downstate Mass Transportation Capital Improvement Fund		$22,089,236	$23,642,812

Sources: Author's analysis using values from Figure 3 and ILEPI, 2021b

Now looking at total revenues from these same funding sources, Figure 5 illustrates the growth over FY18 – FY21. MFT revenue experienced the most significant increase between FY19 and FY20, growing from $1.36 billion in FY18 and FY19 to over $2.3 billion in the following two years, a 70% increase. Vehicle registrations and certificate of title revenues more slowly increased. Total revenues from passenger vehicle and truck registrations only grew from $1.44 billion in FY19 to $1.49 billion in FY20, but then experienced a significant increase of 41% to $2.1 billion in FY21. Vehicle registration fee increases were not implemented until January 2020, which is halfway through FY20, accounting for a slower growth trend. Certificate of title revenues grew by 19% between FY19 and FY20 and another 26% between FY20 and FY21, with revenues ultimately totaling almost $400 million.

Figure 5: Total Revenues Collected for the MFT, Vehicle Registrations, and Certificate of Title Fees, FY18-FY21



	FY18	FY19	FY20	FY21
MFT	$1,368,739,486	$1,359,421,028	$2,312,499,037	$2,381,062,186
Total Vehicle Registrations	$1,322,110,467	$1,468,543,866	$1,519,119,671	$2,144,218,284
Certificate of Titles	$268,334,773	$263,423,906	$314,207,239	$394,982,223

Sources: IDOR, 2021a; Illinois Comptroller, 2021b

EXPENDITURES

OVERVIEW OF IDOT SPENDING

Figure 6 (next page) summarizes IDOT expenditures for FY18-21 by state fund, as reported by the Illinois Comptroller's Financial Data system. IDOT expenditures totaled $6.89 billion in FY21 and $5.67 billion in FY20. Expenditures for these years are noticeably higher than FY18 and FY19, which totaled $4.91 billion and $4.71 billion, respectively, due to the implementation of Rebuild Illinois beginning in FY20.

Road Spending / IDOT Administration

The majority of IDOT spending is from the Road Fund and the State Construction Account. The bulk of state transportation revenues – including the motor fuel tax and vehicle registration, license, and certificate of title fees – are ultimately deposited into these funds. While the Road Fund is used for both IDOT administration and construction expenses, the State Construction Account is exclusively used for highway construction, as further described below.

- **Road Fund**: funding for IDOT administration, construction and reconstruction projects, administration for Chapters 2-10 of the Illinois Vehicle Code, certain public transportation expenses (30 ILCS 105).
- **State Construction Account**: funding for the construction, reconstruction, and maintenance of state maintained highway system; cannot be used for administration costs (30 ILCS 105).

Together, these two funds account for at least 53% of total IDOT expenditures each year between FY18 and FY21. They totaled $3.65 billion and $3.37 billion in FY21 and FY20, respectively.

The last fund included in this category on Figure 6 is the Motor Fuel Tax Fund. While a large portion of motor fuel tax revenue initially goes to this fund, it is then largely distributed between the Road Fund, State Construction Account, and local government distribution funds (as previously described). A small portion is reserved for certain administration costs – including IDOT – which is reflected in Figure 6.

Bond Funds

IDOT spending also includes four bond funds. Bond expenditures are 15% of total IDOT spending in FY21, an almost $500 million increase from FY20 and $730 million increase from FY19, due to Rebuild Illinois. Of the four bond funds, the Multimodal Transportation Bond Fund is the newest, having been created under Rebuild Illinois. The amounts authorized under all of the bonds were increased under Rebuild Illinois. Specific use for each fund is expanded upon below.

- **Transportation Bond Series A Fund**: for highways, roads, bridges, rail grade separation, and grants to counties, municipalities, townships, or road districts for transportation improvement projects, with division of funds specified between statewide, outside Chicago urbanized area, within Chicago urbanized area, City of Chicago, and the Collar Counties (30 ILCS 330).
- **Transportation Bond Series B Fund**: for rail facilities and mass transit facilities, with division of funds specified between statewide and within and outside the Collar Counties; and for airport or aviation facilities (30 ILCS 330).
- **Transportation Bond Series D Fund**: for highways, roads, bridges, freeways, rail grade separation, and for grants to counties, municipalities, townships, or road districts for infrastructure projects and other projects related to economic development (30 ILCS 330).
- **Multimodal Transportation Bond**: for grade crossings, and port, airport, rail, and mass transit facilities (30 ILCS 330).

Figure 6: IDOT Expenditures by Fund, FY18-FY21

Category	Code	Fund	FY18	FY19	FY20	FY21
Road Spending / IDOT Admin	11	**ROAD***	$2,391,724,164	$2,338,690,507	$2,132,244,981	$2,413,611,653
	902	**STATE CONSTRUCTION ACCOUNT***	$557,445,483	$628,850,202	$1,239,721,917	$1,238,338,632
	12	MOTOR FUEL TAX (administrative)	$13,831,206	$16,680,966	$15,221,913	$17,655,757
		TOTAL	$2,963,000,853	$2,984,221,675	$3,387,188,811	$3,669,606,042
		% of Total Expenditures	60%	63%	60%	53%
Bond Funds	553	**TRANSPORTATION BOND, SERIES A***	$25,635,020	$297,523	$250,271,760	$790,168,282
	695	**TRANSPORTATION BOND SERIES D***	$38,907,213	$153,683,649	$171,593,609	$139,863,459
	554	**TRANSPORTATION BOND, SERIES B***	$224,442,390	$143,542,945	$110,956,742	$54,040,052
	959	**MULTIMODAL TRANSPORTATION BOND***	$0	$0	$0	$42,887,712
		TOTAL	$288,984,623	$297,524,117	$532,822,110	$1,026,959,506
		% of Total Expenditures	6%	6%	9%	15%
MFT Distributions to Local Governments	952	TRANSPORTATION RENEWAL**	$0	$0	$327,462,632	$358,015,243
	414	MOTOR FUEL TAX-MUNICIPALITIES**	$285,659,656	$281,804,192	$261,513,820	$245,121,555
	413	MOTOR FUEL TAX-COUNTIES**	$203,611,891	$200,936,146	$186,468,408	$174,780,156
	415	MOTOR FUEL TAX-TOWN & ROAD DIS**	$92,413,395	$91,198,953	$84,632,476	$79,327,526
		TOTAL	$581,684,942	$573,939,291	$860,077,335	$857,244,480
		% of Total Expenditures	12%	12%	15%	12%
Transit	627	PUBLIC TRANSPORTATION	$519,995,588	$474,948,522	$511,179,205	$489,099,310
	648	DOWNSTATE PUBL TRANSPORTATION	$204,185,764	$207,730,344	$216,182,733	$189,955,732
	964	RTA CAPITAL IMPROVEMENT	$0	$0	$0	$63,459,590
	853	FEDERAL MASS TRANSIT TRUST	$25,915,770	$40,404,178	$29,403,644	$55,083,657
	559	DOWNSTATE TRANSIT IMPROVEMENT	$5,085,456	$8,779,068	$4,286,664	$2,825,254
		TOTAL	$755,182,579	$731,862,112	$761,052,245	$800,423,543
		% of Total Expenditures	15%	16%	13%	12%
Air	95	FEDERAL/STATE/LOCAL AIRPORT	$48,391,773	$41,565,417	$101,702,434	$511,268,022
	928	STATE AVIATION PROGRAM	$0	$0	$0	$3,523,070
	46	AERONAUTICS	$52,159	$1,698	$41,046	$436
	309	AIR TRANSPORTATION REVOLVING	$26,249	$68,871	$65,154	$19,479
		TOTAL	$48,470,181	$41,635,986	$101,808,634	$514,811,007
		% of Total Expenditures	1%	1%	2%	7%
Rail	19	GRADE CROSSING PROTECTION	$24,655,705	$18,150,883	$11,245,511	$11,744,110
	433	FEDERAL HIGH SPEED RAIL TRUST	$234,224,418	$44,836,425	$9,231,309	$7,994,384
	936	RAIL FREIGHT LOAN REPAYMENT	$884,814	$900,420	$0	$0
		TOTAL	$259,764,937	$63,887,728	$20,476,820	$19,738,494
		% of Total Expenditures	5.3%	1.4%	0.4%	0.3%
Other	863	CYCLE RIDER SAFETY TRAINING	$2,906,626	$4,770,769	$4,593,694	$2,798,090
	310	TAX RECOVERY	$1,354,933	$1,499,962	$1,600,783	$1,989,346
	589	TRANS SAFETY HIGHWAY HIRE-BACK	$0	$350,000	$200,000	$200,000
	1	GENERAL REVENUE	$4,341,300	$5,692,077	$0	$0
		TOTAL	$8,602,859	$12,312,808	$6,394,477	$4,987,436
		% of Total Expenditures	0.2%	0.3%	0.1%	0.1%
		GRAND TOTAL	**$4,905,690,973**	**$4,705,383,717**	**$5,669,820,433**	**$6,893,770,508**

* These funds include highway construction spending and are expanded on later in this report.

** These funds represent the portion of annual motor fuel tax (MFT) revenues distributed to local governments; amounts are consistent with distribution reported by IDOT.

Source: Illinois Comptroller, 2021a; IDOT, 2021a

Motor Fuel Tax (MFT) Distributions to Local Governments

IDOT expenditures include four funds that account for motor fuel tax (MFT) funding that is distributed to local governments. Illinois statute dictates that counties, municipalities, and townships and road districts receive a portion of all motor fuel tax that is collected. The distribution of these funds is further described in Figure 7.

Figure 7: Distribution of MFT Funds Dedicated to Local Governments

Local Government	% of Total Loc Gov Funds	Funds Distributed Within Each Type of Local Government by
Municipalities	49.10%	Population
Cook County	16.74%	-
Other Counties	18.27%	Motor vehicle license fees collected in each county
Townships and Road Districts	15.89%	Distributed to counties in proportion to township and road district mileage; each county then redistributes based on proportion of road mileage in each district

Source: ILEPI, 2021a

The three motor fuel tax funds (codes 413-415) for municipalities, counties, and town and road districts represent the original MFT distribution to local governments prior to Rebuild Illinois. Following the passage of the 2019 capital bill, local governments began receiving additional funds that came from the increase in the MFT. These funds are represented under the Transportation Renewal Fund, which are subsequently divided between the various local governments following the same percentage breakdown shown in Figure 7.

These distributions represent 12% of total IDOT expenditures in FY21 and 15% in FY20. The distributions totaled approximately $860 million in FY20 and FY21, a significant increase from only $574 million in FY19.

Transit

Transit spending accounted for 12% to 16% of total IDOT expenditures between FY18 and FY21. There are five specific transit funds, which receive funding from federal, state, and local revenues. These five funds largely operate through grants given to local agencies. The Public Transportation Fund and RTA Capital Improvement Fund exclusively support the Regional Transportation Authority (RTA) in the Chicago region. The Downstate Public Transportation Fund and Downstate Transit Improvement Fund support downstate transit agencies. The Federal Mass Transit Trust Fund receives federal monies for grants or assistance to mass transit districts statewide.

Air, Rail, and Other Expenditures

The funds accounting for the remaining expenditures through IDOT address air, rail, and miscellaneous expenditures. Together, these funds account for less than 8% of IDOT's total expenditures in FY21 and less than 3% in FY20 and FY19. As such, this report does not go into extensive detail on them.

The most significant change in recent years that is worth noting is a significant increase through the Federal/State/Local Airport Fund. Federal funding accounts for the majority of these expenditures, likely from COVID-19 relief funding.

SPENDING ANALYSIS

The following section provides an assessment of IDOT expenditures under the following six funds: Road Fund, State Construction Account, Transportation Bond Series A, Transportation Bond Series B, Transportation Bond Series D, and the Multimodal Transportation Bond Fund. These funds are included because they account for all major highway spending through IDOT.

Each of these funds is studied in detail, tracking specific expenditures through IDOT, and then studying each line item to drill down to final highway construction expenditures. Appendix A illustrates the process of this analysis of data through the Illinois Comptroller Financial Data system. The results of this analysis are further expanded upon below.

First, specific highway construction spending is examined between FY18 and FY21. This provides an overall understanding of how Rebuild Illinois impacted construction spending. Next, Rebuild Illinois revenues are compared to IDOT expenditures by state fund. This analysis takes into account actual Rebuild Illinois revenues, estimates their distribution by fund, and compares that distribution to the change in actual expenditures by fund. This provides a clear understanding whether Rebuild Illinois revenues are being appropriately spent in a timely manner.

HIGHWAY CONSTRUCTION SPENDING OVER TIME

Annual Highway Spending

The Road Fund and State Construction Account are the primary funds that account for IDOT's administration and annual state highway construction spending. As described in the previous section, while the State Construction Account is exclusively used for construction projects, the Road Fund includes a portion of funding for administrative costs.

Figures 8 and 9 compare total IDOT expenditures from the Road Fund and State Construction Account to total highway construction expenditures from these two funds between FY18 and FY21. Appendix A shows how highway construction spending was identified and the exact line items included in this total.

Figure 8: Highway Construction as Percent of IDOT Expenditures from the Road Fund and State Construction Account

	FY18	FY19	FY20	FY21
Total IDOT Expenditures from Road Fund and State Construction Account	$2,949,169,647	$2,967,540,709	$3,371,966,898	$3,642,499,493
Increase over 2019			$404,426,188	$674,958,784
Percent increase over 2019			14%	23%
Total Hwy Construction Expenditures	$1,791,390,949	$1,706,443,075	$2,135,461,419	$2,360,188,113
Increase over 2019			$429,018,344	$653,745,038
Percent increase over 2019			25%	38%
Hwy Construction Expenditures as % of Total	61%	58%	63%	65%

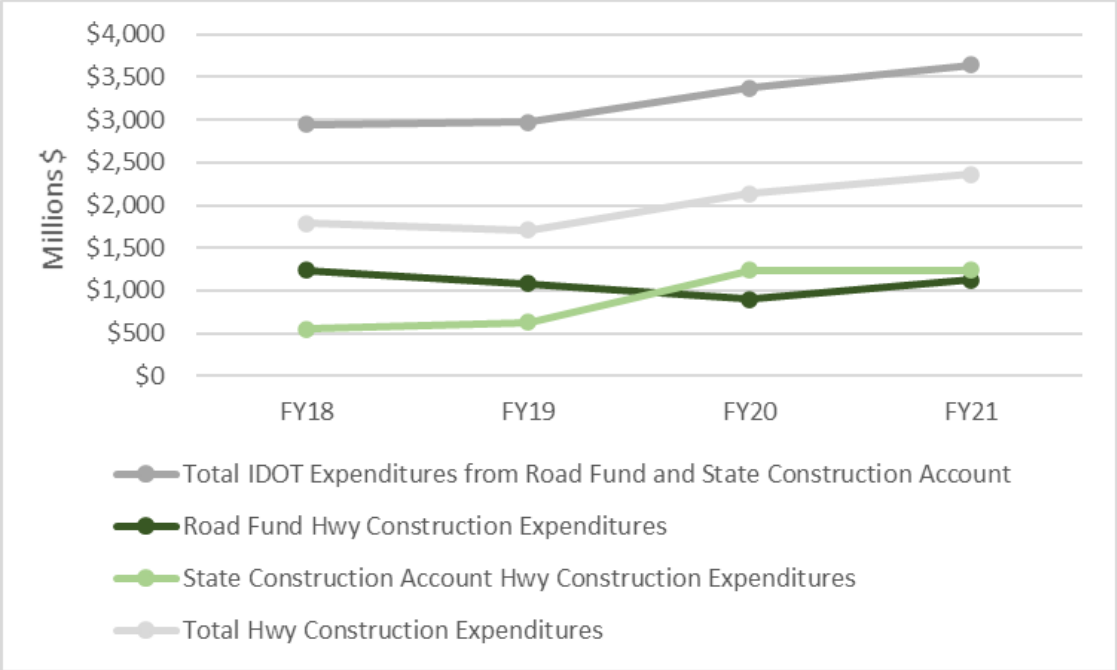
Source: Author's analysis of Illinois Comptroller, 2021a and expanded upon in Appendix A

Highway construction expenditures as a percent of total Road Fund and State Construction Account expenditures increased from 58% in FY19 to 63% in FY20 and again to 65% in FY21 (Figures 8). When comparing total expenditures in FY20 and FY21 to FY19 – the last year before Rebuild Illinois went into effect – total IDOT expenditures increased by 14% between FY20 and FY19 and 23% between FY21 and FY19. Highway construction expenditures increased by 25% in FY20 compared to FY19 and 38% between FY21 and FY19. Consequently, both total expenditures – including construction,

administrative, and otherwise – and construction expenditures increased over the years, yet construction expenditures increased at a higher rate. Additionally, when specific administrative spending was analyzed under the Road Fund, it was found that expenditures remained fairly constant between FY18 and FY21.

Figure 9 illustrates IDOT expenditures from these two accounts compared to highway construction expenditures. While highway construction expenditures from the Road Fund slightly decreased over the years, they significantly increased through the State Construction Account. Furthermore, total highway construction expenditures increased each year between FY19 and FY21, similar to total IDOT expenditures.

Figure 9: IDOT Highway Construction Costs Compared to Total Expenditures from the Road Fund and State Construction Account



Source: Author's analysis of Illinois Comptroller 2021A; further expanded upon in Appendix A

Bond Fund Spending

Bonding is an additional component of highway construction spending under IDOT. Figure 10 summarizes IDOT expenditures from the four transportation bond funds for highway construction, transportation grants, and grants to local governments. These three categories were analyzed as they are expected to account for construction spending specifically. These categories capture the majority of spending under these bond funds, with railroad and aeronautic construction representing the other expenditures.

Looking first at highway construction expenditures, there was an increase of $17 million between FY19 and FY20 and a $19 million increase between FY20 and FY21. The majority of this increase in spending came under Transportation Bond Series A. This fund experienced a significant increase in expenditures in FY21, while Transportation Bond Series B saw a decrease in expenditures each year between FY18 and FY21. Transportation Bond Series D saw a minor increase in FY20, but a decrease in FY21. Initial spending under the Multimodal Transportation Fund began in FY21.

Expenditures for Transportation Grants have decreased since FY18. However, $16.5 million was spent through the multimodal transportation fund in FY21.

The most significant recent bond funding is through Transportation Bond Series A in the form of grants to Local Governments. This funding was identified in Public Act 101-0029 of Rebuild Illinois for transportation improvement projects for local governments. In total, $1.5 billion was set aside, to come in a series of six installments over three years. The first installment of $250 million came in FY20, with three more in FY21 totaling $750 million. This funding is distributed between municipalities, counties, and townships and road districts using the same formula implemented for the MFT (IDOT, 2021).

Figure 10: IDOT Expenditures from Bond Funds

Highway Construction Expenditures				
	FY18	**FY19**	**FY20**	**FY21**
Transportation Bond, Series A	$25,635,020	$297,523	$271,760	$40,168,282
Transportation Bond, Series B	$5,239,444	$825,393	$454,714	$223,055
Transportation Bond, Series D	$37,660,591	$153,342,709	$171,451,032	$139,822,340
Multimodal Transpo Fund				$11,360,822
TOTAL	$68,535,055	$154,465,626	$172,177,506	$191,574,499
Transportation Grants				
	FY18	**FY19**	**FY20**	**FY21**
Transportation Bond, Series A				
Transportation Bond, Series B	$201,738,182	$128,436,644	$62,229,105	$27,984,670
Transportation Bond, Series D				
Multimodal Transpo Fund				$16,588,333
TOTAL	$201,738,182	$128,436,644	$62,229,105	$44,573,003
Grants to Local Governments				
	FY18	**FY19**	**FY20**	**FY21**
Transportation Bond, Series A			$250,000,000	$750,000,000
Transportation Bond, Series B				
Transportation Bond, Series D				
Multimodal Transpo Fund				
TOTAL			$250,000,000	$750,000,000

Source: Author's analysis of Illinois Comptroller 2021A; further expanded upon in Appendix A

With the exception of the Multimodal Transportation Fund, all of these bond funds existed and funded projects prior to the passage of Rebuild Illinois. Rebuild Illinois increased bonding authority for the three existing bond funds, however new appropriations were only provided for Transportation Bond Series A. The largest increase in expenditures is in grants to local governments under Transportation Bond Series A, totaling $1 billion between FY20 and FY21. Highway construction expenditures under the Multimodal Transportation Fund totaled almost $28 million in FY21. And Transportation Bond Series A increased almost $40 million in highway construction expenditures between FY19 and FY21.

Overall, an increase in funding under Highway Construction and Grants to Local Governments was seen in FY20 and FY21, consistent with increased funding from Rebuild Illinois. A more detailed analysis of bond spending specifically from Rebuild Illinois is in the following section.

REBUILD ILLINOIS SPENDING ANALYSIS

Rebuild Illinois was adopted in July 2019, the beginning of FY20. Both the motor fuel tax and certificate of title fee increases went into effect at that time, however vehicle registration fees did not begin until January 2020. The following section directly compares anticipated revenues from these fee increases to IDOT expenditures for FY20 and FY21. This analysis helps to identify whether funding generated under the capital bill is being appropriately spent in a timely manner.

New revenue generated under Rebuild Illinois is calculated in Figures 3 and 4. Those figures are again summarized below in Figure 11 and compared to actual expenditures observed under these funds for FY20 and FY21. In order to show the change from Rebuild Illinois, FY19 expenditures – the last year before Rebuild Illinois was implemented – are used as a base amount and are subtracted from FY20 and FY21 expenditures. That value can then be used to show the potential increase in spending due to additional Rebuild Illinois revenues.

Figure 11: Comparison of Actual Expenditures to Rebuild Illinois Revenues by Fund, FY20-FY21

Fund	FY19 Base Amount	FY 2020		FY 2021	
		Total	Increase over FY19	Total	Increase over FY19
ROAD FUND					
IDOT Expenditures Only	**$2,338,690,507**	**$2,132,244,981**	**-$206,445,526**	**$2,404,160,861**	**$65,470,354**
Other Agency Expenditures (SOS, comptroller, court of claims, others)	$123,953,826	$167,734,752	$43,780,926	$174,465,221	$50,511,395
Statutory Transfer to GRF	$100,000,000	$100,000,000	$0	$400,000,000	$300,000,000
Statutory Transfers - Other (public transit, workers comp, debt service, others)	$594,679,316	$686,240,337	$91,561,021	$735,106,679	$140,427,363
TOTAL ROAD FUND	$3,157,323,649	$3,086,220,070	-$71,103,579	$3,713,732,761	$556,409,112
New Revenues Under Rebuild Illinois			**$339,609,386**		**$783,349,923**
STATE CONSTRUCTION ACCOUNT					
IDOT Expenditures Only	**$628,850,202**	**$1,239,721,917**	**$610,871,715**	**$1,238,338,632**	**$609,488,430**
Statutory Transfer to GRF	$270,000,000	$250,000,000	-$20,000,000	$0	-$270,000,000
Statutory Transfer - Other (Audit)	$106,236	$33,539	-$72,697	$129,461	$23,225
TOTAL STATE CONSTRUCTION ACCOUNT	$898,956,438	$1,489,755,456	$590,799,018	$1,238,468,093	$339,511,655
New Revenues Under Rebuild Illinois			**$530,141,665**		**$567,427,498**
RTA CAPITAL IMPROVEMENT FUND					
Expenditures	$0	$0	$0	$63,459,590	$63,459,590
New Revenues Under Rebuild Illinois			**$198,803,124**		**$212,785,312**
DOWNSTATE MASS TRANSPORTATION CAPITAL IMPROVEMENT FUND					
Expenditures	$0	$0	$0	$0	$0
New Revenues Under Rebuild Illinois			**$22,089,236**		**$23,642,812**

Sources: Author's analysis using numbers calculated in Figures 4, 6, and Appendix A

Road Fund

Under the Road Fund, expenditures are broken down by IDOT, other agencies, statutory transfers – to the General Revenue Fund (GRF) and others – and total Road Fund expenditures (Figure 11). Both total expenditures and IDOT only expenditures decreased between FY19 and FY20, yet it is estimated that Rebuild Illinois generated an additional $339 million for FY20. This indicates that increased funding from Rebuild Illinois revenue dedicated to the Road Fund was not spent in FY20.

Expenditures in FY21 are slightly more complicated, with total expenditures increasing by $556 million over FY19 and IDOT expenditures only increasing by $65 million. One of the main reasons for this difference between IDOT versus total Road Fund spending is the Statutory Transfer to the GRF. The Road Fund has loaned money to the GRF for the last several years, totaling $100 million in FY19 and FY20 and increased to $400 million in FY21 (Figure 11). The General Assembly permitted interfund borrowing beginning in FY17, which allows transfers from unspecified special state funds to the GRF. For funds beginning in FY22 the payback period was extended from an original 24 months to 60 months and transfers can total up to the $1.5 billion (30 ILCS 105/5h.5; COGFA, 2019). However, interfund transfers to the GRF have not occurred out of the Road Fund so far in FY22.

Consequently, increased expenditures under the Road Fund largely cannot be attributed to increased construction spending because of Rebuild Illinois. It is estimated that the Road Fund should have received an additional $783 million as a result of fee increases to the MFT, vehicle registrations, and certificates of title in FY21. This money, in addition to the additional $339 million from FY20, should be dedicated to increased construction spending, yet that is not apparent through these expenditure figures (Figure 11).

While it is understood that expenditures are not always indicative of projects that are moving forward, as a project can be awarded and underway without any spending happening, one would expect some increase in expenditures by the second full year of Rebuild Illinois being implemented. Overall, additional information is needed to understand where the unspent revenue is being held and how IDOT plans to ensure its timely use.

State Construction Account

As shown in Figure 11, state construction account IDOT only expenditures increased by $611 million in FY20 and $610 million in FY21 compared to FY19. Rebuild Illinois revenues are estimated to dedicate an additional $530 million in FY20 and $567 million in FY21 to the state construction account. This indicates that increased revenue from Rebuild Illinois is being appropriately spent from the State Construction Account.

However, similar to the Road Fund, the State Construction Account has also seen Statutory Transfers to the GRF total $270 million in FY19 and $250 million in FY20, yet these transfers did not exist in FY21. While this ultimately is not an issue in terms of Rebuild Illinois spending – as we can see increased spending is accounted for under IDOT expenditures – it does show that a portion of spending that should be solely dedicated for transportation purposes has been permitted to be loaned instead of dedicated to projects as soon as possible.

RTA Capital Improvement Fund

The RTA Capital Improvement Fund was newly created under Rebuild Illinois, thus it does not have expenditures for FY19. However, there are no expenditures reported for FY20, despite Rebuild Illinois revenues estimated to dedicate $198 million to the fund. FY21 expenditures totaled $63 million, significantly below the $213 million in new revenues dedicated to the fund. This indicates that increased funding from Rebuild Illinois has not been fully distributed to the RTA.

Downstate Mass Transportation Capital Improvement Fund

The Downstate Mass Transportation Capital Improvement Fund was newly created under Rebuild Illinois, thus it does not have expenditures for FY19. However, expenditures are not reported for either

FY20 or FY21. This indicates that increased funding from Rebuild Illinois has yet to be spent on downstate transit capital projects.

Bond Fund Spending

Bonding authority was significantly increased under Rebuild Illinois, including increases for the Transportation Bond Series A, Transportation Bond Series B, and Transportation Bond Series D, and the Multimodal Transportation Bond was newly created. Figure 12 summarizes these four bond funds and the amount of money appropriated, released, and expended between FY18 and FY21. While the appropriated amounts reflect the amount outlined in the budget, IDOT reports that "released" funds are those available to be spent, and expended funds are those that have been spent. Expended funds do not tell the full story, as projects may be awarded and underway without any expended funds reflecting the progress. Released funds provide a more accurate picture of funding moving and dedicated to projects.

Figure 12: Transportation Bond Spending through IDOT, FY18-FY21

TRANSPORTATION BOND, SERIES A				
	FY18	**FY19**	**FY20**	**FY21**
Appropriated	$78,988,611	$53,353,591	$6,501,577,268	$6,415,790,508
Released	$67,178,116	$41,543,096	$610,658,268	$1,064,233,508
% Released	85%	78%	9%	17%
Expended	$25,635,020	$297,523	$250,271,760	$790,168,282
TRANSPORTATION BOND, SERIES B				
	FY18	**FY19**	**FY20**	**FY21**
Appropriated	$1,960,610,756	$1,745,064,474	$1,591,135,131	$1,480,178,397
Released	$860,099,720	$875,768,577	$768,244,600	$656,808,803
% Released	44%	50%	48%	44%
Expended	$224,442,390	$143,542,945	$110,956,742	$54,040,052
TRANSPORTATION BOND, SERIES D				
	FY18	**FY19**	**FY20**	**FY21**
Appropriated	$771,325,559	$732,418,347	$578,734,699	$407,141,092
Released	$429,254,833	$708,114,263	$556,021,615	$402,648,393
% Released	56%	97%	96%	99%
Expended	$38,907,213	$153,683,649	$171,593,609	$139,863,459
MULTIMODAL TRANSPORTATION BOND				
	FY18	**FY19**	**FY20**	**FY21**
Appropriated	-	-	$4,500,000,000	$4,582,000,000
Released	-	-	$1,534,638,368	$1,825,152,284
% Released	-	-	34%	40%
Expended	-	-	$0	$42,887,712

Source: Illinois Comptroller, 2021c

Transportation Bond Series A was authorized an additional $6.489 billion under Rebuild Illinois (ILEPI, 2020) with appropriations following. This is apparent in Figure 12, with appropriated funding increasing by close to that amount between FY19 and FY20. Despite this, released funds only totaled $610 million in FY20 and $1.06 billion in FY21. This indicates that while some Rebuild Illinois projects have begun, there is still a significant amount of funding that has yet to be released.

Transportation Bond Series B was authorized an additional $587 million under the Rebuild Illinois legislation (ILEPI, 2020). This is not reflected in appropriated funding between FY19 and FY20 as there

were no new appropriations granted since. This authorization addressed previous capital funding, and as a result, this bond cannot be considered specific funding for Rebuild Illinois.

Transportation Bond Series D was authorized an additional $6.5 million under the Rebuild Illinois legislation (ILEPI, 2020). Similar to Transportation Bond Series B, this is not reflected in appropriated funding between FY19 and FY20 as there were no new appropriations granted since. Again, this authorization addressed previous capital funding, and as a result, this bond cannot be considered specific funding for Rebuild Illinois.

The Multimodal Transportation Bond was newly created under Rebuild Illinois and was authorized $4.5 billion dollars (ILEPI, 2020). This is clearly shown in appropriated funds for FY20 and FY21 in Figure 12. Released funds totaled $1.5 billion in FY20 and $1.8 billion in FY21 and expended funds were $0 in FY20 and only $42 million FY21. This indicates that projects have begun, yet there is still a significant amount of funding that has yet to be released.

PROJECT SPENDING ANALYSIS

Providing a different perspective on transportation spending in Illinois, the following section evaluates planned projects and project lettings. This project specific analysis also allows for an account of the distribution of funding across the state. IDOT District 1 – encompassing Cook, DuPage, Kane, Lake, McHenry, and Will counties – is specifically highlighted as it accounts for most of Illinois' major roads and travel and a large percentage of transportation funding.

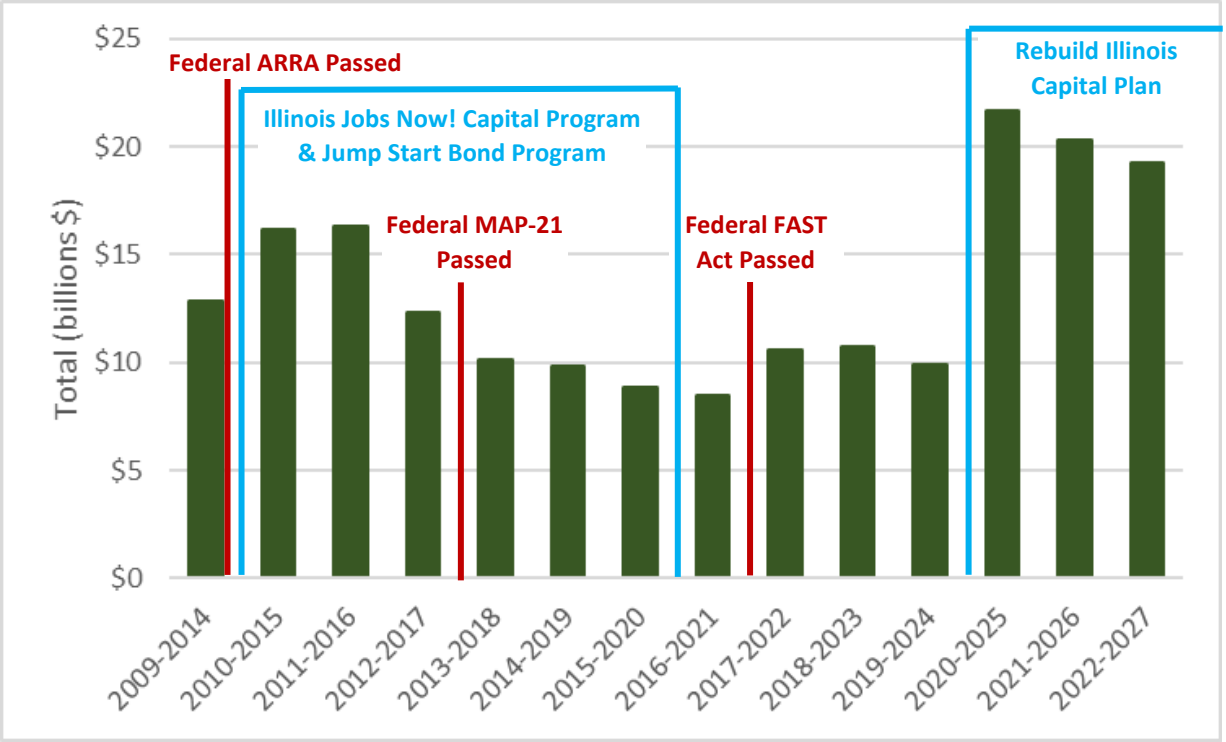
MULTI-YEAR PROGRAM (MYP) ANALYSIS

Statewide transportation projects are planned through IDOT's Multi-Year Program (MYP). Also known as the Highway Improvement Program, the MYP is developed annually and lists planned projects for a six-year period. This plan includes both state managed and local projects, identifying the use of state, federal, local, and bond funding.

MYP Total Funding

MYPs from FY 2009-2014 to FY 2022-2027 are considered in this analysis. Every project listed in each of these documents was input into a spreadsheet to provide an overall total and distribution of funding by district. Figure 13 summarizes the MYP totals for each year with corresponding federal and state funding plan, using inflation adjusted dollars to provide the best comparison of funding changes.

Figure 13: MYP Total Funding (billions in 2021$) with Federal and State Funding Plan Timelines, FY09-14 to FY22-27



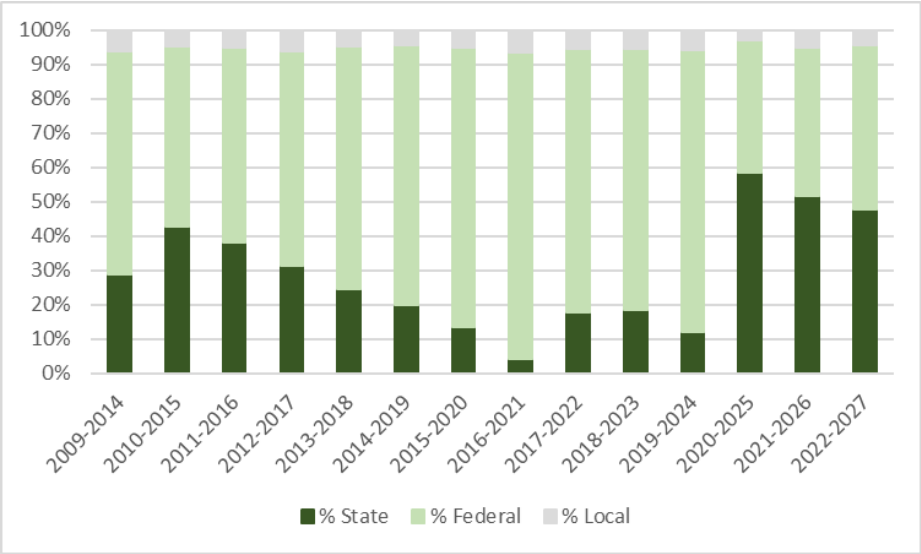
Source: Author's summary of project lists within IDOT MYPs FY09-14 to FY22-27; adjusted for inflation using Federal Reserve Bank of Minneapolis, 2022

In 2021 dollars, Illinois MYP totals range from a low of $8.5 billion in FY 2016-2021 to a high of $21.7 billion in FY 2020-2025. Following the passage of the federal American Recovery and Reinvestment Act (ARRA) and state Illinois Jobs Now! and Jump Start capital programs in 2009, Illinois experienced an

increase in transportation funding in the following years. After that period, programmed funding gradually declined, hitting a low for the FY 2016-2021 program. MYP totals slightly increased for the subsequent three years, after the passage of the federal Fixing America's Surface Transportation (FAST) Act. MYP funding more than doubled between FY 2019-2024 and FY 2020-2025 from the passage of the Rebuild Illinois.

The breakdown of federal, state, and local funding for each year is illustrated in Figure 14. Illinois state funding accounts for between 4% of total programmed funding in the FY 2016-2021 MYP to 58% of total funding in the FY 2020-2025 program. The percentage of state funding appears to be dependent on a state capital program. The three most recent years supplied the highest percentage and amount of state funding due to the historic passage of Rebuild Illinois.

Figure 14: Percent of State, Federal, and Local Funds for FY09-14 to FY22-27 MYPs



Source: IDOT MYPs FY09-14 to FY22-27

MYP Programmed Funding by District

Figure 15 summarizes total programmed funding by district and the percent of total programmed funding for each district and year. Differing from Figure 12, these totals are in nominal dollars, meaning they were not adjusted for inflation. District 1 receives the largest percentage of programming from the MYP. Accounting for Cook, DuPage, Kane, Lake, McHenry, and Will Counties, District 1 is the most populous and most heavily traveled region. Between FY09 and the current MYP, District 1 had between 35% and 44% of total MYP programmed funding, ranging from $3.2 billion to $7.8 billion. Seven of these 14 years, District 1 accounts for 40% or more of total programming. Since Rebuild Illinois passed, District 1 accounts for 35% of total MYP programmed funding.

District 8 – which includes the counties in and surrounding the St. Louis metropolitan area in southwest Illinois – accounts for the second largest percent of programmed funding over the years. District 8 received between 7% and 13%, ranging from $628 million to $2.4 billion.

While this analysis provides a general understanding of the division of programmed funding across the state, it is not unexpected to have a year-to-year difference in percent breakdown by district. Differing schedules and values for projects can impact the value of programming for each year. Additionally, earmarked projects through either a state or federal capital program will impact programming.

Figure 15: Summary of MYP Programmed Funding by District (in billions), FY09-14 to FY22-27*

	2009-2014	2010-2015	2011-2016	2012-2017	2013-2018	2014-2019	2015-2020	2016-2021	2017-2022	2018-2023	2019-2024	2020-2025	2021-2026	2022-2027
DISTRICT 1	$4.003	$5.379	$5.404	$4.351	$3.441	$3.822	$3.217	$3.352	$4.395	$4.512	$4.102	$7.761	$7.112	$6.725
DISTRICT 2	$0.762	$1.065	$1.159	$0.788	$0.621	$0.744	$0.904	$0.850	$0.936	$0.777	$0.603	$1.297	$1.481	$1.311
DISTRICT 3	$0.843	$0.841	$0.884	$0.618	$0.633	$0.666	$0.559	$0.430	$0.547	$0.656	$0.565	$1.496	$1.271	$1.016
DISTRICT 4	$0.683	$0.821	$0.892	$0.640	$0.546	$0.605	$0.613	$0.633	$0.725	$0.827	$0.750	$1.563	$1.616	$1.542
DISTRICT 5	$0.362	$0.522	$0.467	$0.329	$0.243	$0.260	$0.245	$0.289	$0.436	$0.498	$0.493	$0.804	$0.877	$0.710
DISTRICT 6	$0.560	$0.762	$1.001	$0.638	$0.513	$0.474	$0.459	$0.378	$0.511	$0.546	$0.508	$1.340	$1.471	$1.316
DISTRICT 7	$0.419	$0.651	$0.845	$0.510	$0.481	$0.471	$0.332	$0.313	$0.425	$0.442	$0.424	$1.376	$1.268	$1.102
DISTRICT 8	$1.258	$1.726	$1.550	$1.162	$0.885	$0.777	$0.672	$0.628	$0.705	$0.734	$0.916	$2.438	$2.432	$2.421
DISTRICT 9	$0.499	$0.609	$0.629	$0.480	$0.423	$0.413	$0.331	$0.290	$0.446	$0.453	$0.530	$1.162	$1.179	$1.169
STATEWIDE	$1.258	$1.253	$1.345	$1.435	$1.354	$0.745	$0.797	$0.693	$0.924	$0.967	$0.729	$2.179	$1.580	$1.958
TOTAL	$10.647	$13.628	$14.176	$10.953	$9.140	$8.976	$8.129	$7.857	$10.049	$10.412	$9.620	$21.415	$20.288	$19.269
% of Total														
DISTRICT 1	38%	39%	38%	40%	38%	43%	40%	43%	44%	43%	43%	36%	35%	35%
DISTRICT 2	7%	8%	8%	7%	7%	8%	11%	11%	9%	7%	6%	6%	7%	7%
DISTRICT 3	8%	6%	6%	6%	7%	7%	7%	5%	5%	6%	6%	7%	6%	5%
DISTRICT 4	6%	6%	6%	6%	6%	7%	8%	8%	7%	8%	8%	7%	8%	8%
DISTRICT 5	3%	4%	3%	3%	3%	3%	3%	4%	4%	5%	5%	4%	4%	4%
DISTRICT 6	5%	6%	7%	6%	6%	5%	6%	5%	5%	5%	5%	6%	7%	7%
DISTRICT 7	4%	5%	6%	5%	5%	5%	4%	4%	4%	4%	4%	6%	6%	6%
DISTRICT 8	12%	13%	11%	11%	10%	9%	8%	8%	7%	7%	10%	11%	12%	13%
DISTRICT 9	5%	4%	4%	4%	5%	5%	4%	4%	4%	4%	6%	5%	6%	6%
STATEWIDE	12%	9%	9%	13%	15%	8%	10%	9%	9%	9%	8%	10%	8%	10%

* The values shown here are different from Figure 12 as the values are NOT adjusted for inflation

Source: Author's summary of project lists within IDOT MYPs FY09-14 to FY22-27

Figure 16: MYP Funding Total Discrepancy (in billions), FY09-14 to FY22-27*

	2009-2014	2010-2015	2011-2016	2012-2017	2013-2018	2014-2019	2015-2020	2016-2021	2017-2022	2018-2023	2019-2024	2020-2025	2021-2026	2022-2027
Totals Reported in MYPs	$10.875	$14.314	$12.840	$11.525	$9.168	$9.530	$8.609	$8.385	$11.173	$11.650	$11.050	$23.490	$21.260	$20.700
Author's Analysis	$10.647	$13.628	$14.176	$10.953	$9.140	$8.976	$8.129	$7.857	$10.049	$10.412	$9.620	$21.415	$20.288	$19.269
Difference	$0.228	$0.686	-$1.336	$0.572	$0.028	$0.554	$0.480	$0.528	$1.124	$1.238	$1.430	$2.075	$0.972	$1.431

* The values shown here are different from Figure 12 as the values are NOT adjusted for inflation

Source: Author's summary of project lists within IDOT MYPs FY09-14 to FY22-27

MYP Funding Discrepancy

As previously mentioned, the analysis of MYPs was done by manually inputting project totals into a spreadsheet as a means to get district-by-district programmed funding summary. In doing so, a discrepancy was discovered. The funding total of all projects listed in each MYP does not match the funding total referenced in the introduction section of each document. In all but one year, the total reported in the summary text at the beginning of each MYP is larger than the total of all projects listed in the same document. This data is summarized in Figure 16 (previous page).

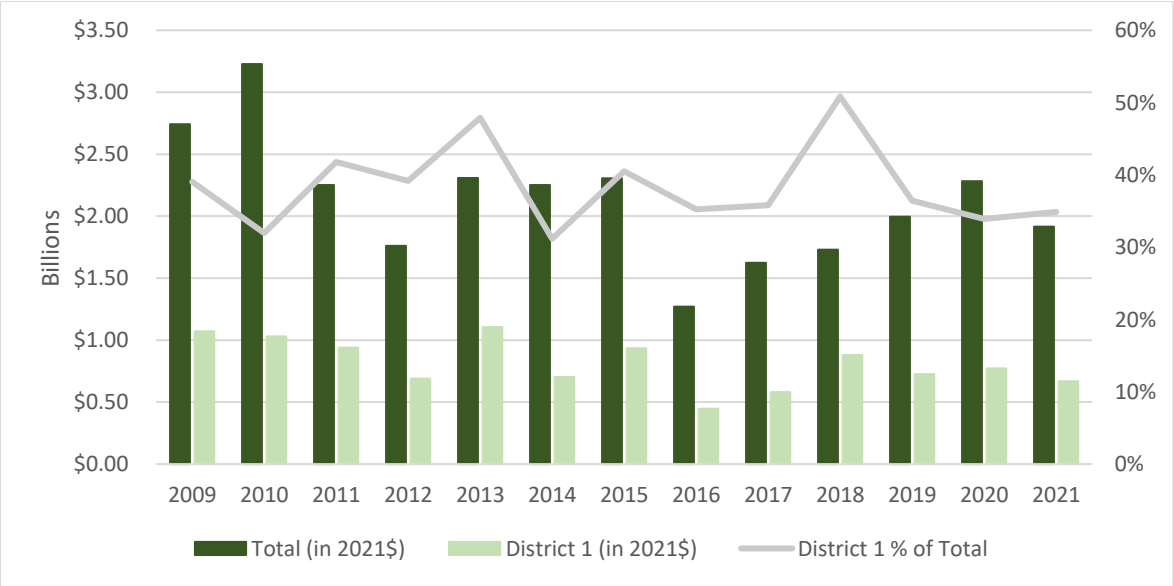
Over these 14 years, the difference is an average of $700 million. However, some years the difference is as much as $2 billion, as is the case for FY 2020-2025. Since the FY 2017-2022 MYP, the discrepancies are all larger than $1.1 billion apart from one year, which is still a difference of $972 billion.

While some discrepancies can be expected, due to rounding error or programming inconsistencies for projects in future years, consistent differences of over $1 billion are substantial and worth exploring.

IDOT PROJECT LETTINGS

IDOT project letting data summarizes all highway construction projects that are bid each year by IDOT. Project specifics and total cost are included, allowing an analysis of highway construction spending across the state. Figure 17 summarizes IDOT project letting totals for 2009 to 2021 for Illinois and District 1. Statewide highway construction expenditures between 2009 and 2021 range from a low of $1.2 billion in 2016 to a high of $3.2 billion in 2010, in 2021 dollars. 2009 and 2013 had the next highest total at $2.7 billion and $2.3 billion, respectively. Focusing solely on IDOT's District 1, project letting totals range from $447 million in 2016 to $1.1 billion in 2013. District 1 makes up between 31% to 51% of total construction investments per year. On average, District 1 represents 38% of total construction expenditures across the state between 2009 and 2021.

Figure 17: IDOT Project Letting Statewide and District 1 Totals (billions in 2021$) and District 1 Percent of Total

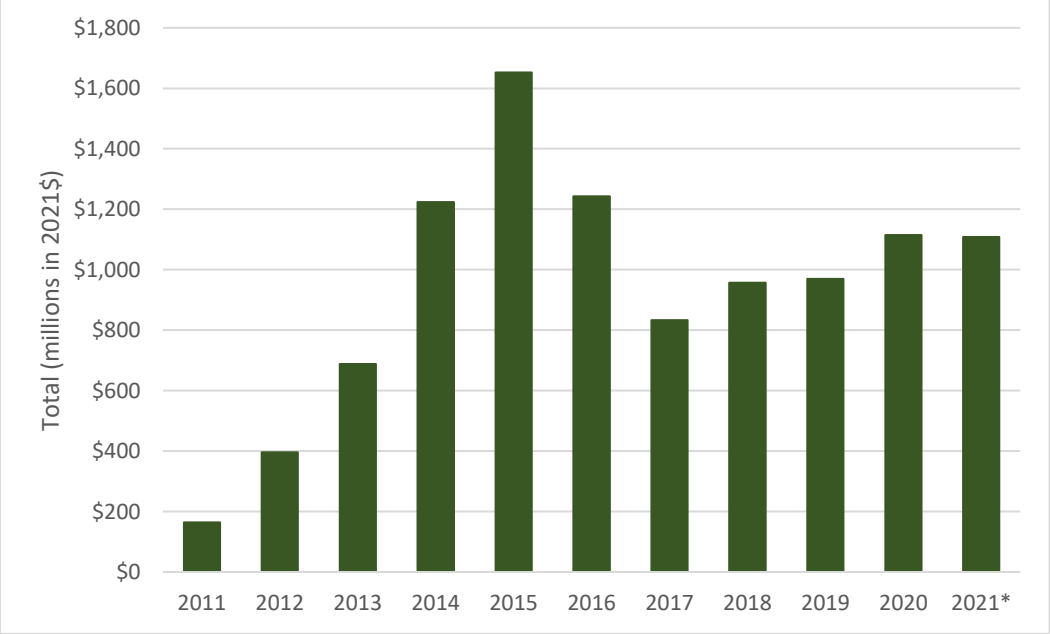


Source: IDOT, 2021c: adjusted for inflation using Federal Reserve Bank of Minneapolis, 2022

TOLLWAY CAPITAL SPENDING

To provide a complete picture of highway spending in Illinois, Figure 18 summarizes capital program expenditures through the Illinois Tollway adjusted for inflation in 2021 dollars. The Tollway's highway system spans 12 counties in Northern Illinois. While a substantial portion of its system is located within IDOT's District 1, both I-88 and I-90 reach to other counties. This spending includes major capital renewal or repair projects and general improvements made on the system.

Figure 18: Illinois Tollway Capital Program Expenditure (millions in 2021$), 2011-2021



* Through third quarter ending September 20, 2021

Sources: Illinois Tollway, 2011-2021; adjusted for inflation using Federal Reserve Bank of Minneapolis, 2022

Move Illinois: The Illinois Tollway Driving the Future capital program provides the majority of this funding. The 15-year program was approved in August 2011, lasting from 2012 through 2026. The Board of Directors subsequently added an additional $2 billion to the program in April 2017, making total investments equal $14 billion. The earlier years also received funding from the Congestion-Relief Program (CRP), which begin in 2005 and was completed in 2016. This 12-year program totaled $5.7 billion.

After 2011 had the lowest level of investment over the past 11 years, totaling only $64 million in 2021 dollars, capital investments increased following the passage of the Move Illinois program. The largest level of funding was between 2014 and 2016, with 2015 topping out at $1.7 billion. Investments again increased in 2020 and 2021, totaling over $1.1 billion for both years.

Tollway capital funding supports improvements to the Tri-State Tollway (I-94/I-294/I-80), Reagan Memorial Tollway (I-88), Jane Addams Memorial Tollway (I-90), Elgin O'Hare Western Access, and others. In recent years, the largest investments are on the Tri-State Tollway and Elgin O'Hare Western Access projects, accounting for 47% and 29%, respectively, of total capital spending in 2020.

DISTRICT 1 PROJECT SPENDING

The following section summarizes District 1 highway construction programming and spending, using the previous analyses of the MYP and IDOT letting data. Figure 19 provides a direct comparison of these assessments. District 1 projects programmed in the MYP account for between 35% and 43% of total IDOT programming each year. On average, District 1 represents 40% of total programming each year between the FY09-14 to FY22-27 MYPs. Similarly, the analysis of IDOT letting data shows that District 1 comprises between 31% and 51% of total construction spending statewide. On average, District 1 has 38% of total funding each year between 2009 and 2021.

Figure 19: Comparison of District 1 Highway Construction Spending from MYP and IDOT Letting

MYPs														
	2009-2014	2010-2015	2011-2016	2012-2017	2013-2018	2014-2019	2015-2020	2016-2021	2017-2022	2018-2023	2019-2024	2020-2025	2021-2026	2022-2027
Total	$10.647	$13.628	$14.176	$10.953	$9.140	$8.976	$8.129	$7.857	$10.049	$10.412	$9.620	$21.415	$20.288	$19.269
District 1	$4.003	$5.379	$5.404	$4.351	$3.441	$3.822	$3.217	$3.352	$4.395	$4.512	$4.102	$7.761	$7.112	$6.725
District 1 Percent	38%	39%	38%	40%	38%	43%	40%	43%	44%	43%	43%	36%	35%	35%
IDOT LETTING														
	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Total	$2.272	$2.720	$1.956	$1.561	$2.077	$2.060	$2.112	$1.178	$1.538	$1.679	$1.935	$2.254	$1.915	Data Not Available
District 1	$0.887	$0.869	$0.817	$0.612	$0.995	$0.642	$0.855	$0.415	$0.551	$0.854	$0.705	$0.764	$0.668	
District 1 Percent	39%	32%	42%	39%	48%	31%	40%	35%	36%	51%	36%	34%	35%	
* The values shown here are different from Figures 12 and 16 as these values are NOT adjusted for inflation														

Sources: Author's summary of project lists within IDOT MYPs FY09-14 to FY22-27; IDOT, 2021c

To put it into context, the five counties that make up District 1 – Cook, DuPage, Kane, Lake, McHenry, and Will – account for 66% of Illinois' total population, 55% of Illinois' annual vehicle miles of travel (AVMT), and 46% of Illinois' vehicle registrations (U.S. Census Bureau, 2022; IDOT, 2020b; ILSOS, 2021).

On average, between 2018 and 2020, District 1 AVMT totaled between 50 billion and 59 billion AVMT. Cook County made up the bulk of this, averaging over 30 billion AVMT. And while AVMT decreased statewide across Illinois in 2020 – due to the COVID-19 pandemic – District 1 still accounted for 54% of total travel (Figure 20).

Figure 20: District 1 Annual Vehicle Miles of Travel

	2018	2019	2020	Average
Cook	32,291,611,565	32,214,304,711	27,069,583,874	30,525,166,717
DuPage	8,641,461,881	8,525,783,822	6,899,051,103	8,022,098,935
Kane	4,047,762,396	4,059,252,370	3,540,934,335	3,882,649,700
Lake	5,825,547,259	5,983,710,275	5,147,956,726	5,652,404,753
McHenry	2,361,554,515	2,428,198,091	2,145,103,982	2,311,618,863
Will	6,391,767,547	6,441,351,885	5,544,923,495	6,126,014,309
District 1 Total	59,559,707,181	59,652,603,173	50,347,555,535	56,519,955,296
Illinois	108,064,947,692	107,607,081,026	93,995,423,654	103,222,484,124
District 1 %	55%	55%	54%	55%

Source: IDOT, 2020b

As illustrated in Figure 21, District 1 vehicle registrations totaled over five million for all vehicles. Passenger and B Truck registrations account for the majority, over four million, which is 48% of Illinois' total. While District 1 has the least number of TA trailer registrations – only 27% of the state – the remaining vehicles account for over 41% of statewide registrations.

Figure 21: District 1 Vehicle Registrations

	Passenger & B Truck	TA Trailer	Motorcycle	Fiscal Truck	Other	Total
Cook	1,732,802	20,237	38,808	69,778	275,663	2,137,288
DuPage	690,942	10,466	18,704	72,940	117,619	910,671
Kane	373,730	8,973	11,300	22,486	46,735	463,224
Lake	518,915	11,525	15,576	27,154	60,437	633,607
McHenry	241,166	9,928	11,587	18,061	37,598	318,340
Will	507,995	13,686	17,434	28,699	81,255	649,069
District 1 Total	4,065,550	74,815	113,409	239,118	619,307	5,112,199
Illinois	8,545,606	278,226	276,816	570,090	1,508,476	11,179,214
District 1 %	48%	27%	41%	42%	41%	46%

Source: ILSOS, 2021

Because District 1 accounts for a large proportion of Illinois' total travel and registrations, it can be expected to account for a larger proportion of Illinois' transportation revenues. Figure 22 calculates estimated revenue for District 1 from the motor fuel tax (MFT) and vehicle registrations.

Figure 22: Calculating Estimated Motor Fuel Tax and Vehicle Registration Revenue for District 1

Motor Fuel Tax		Vehicle Registrations	
District 1 AVMT	56,519,955,296	District 1 Total Registrations	5,112,199
Miles Per Gallon (national avg for all vehicles)	18.1	Illinois Total Registrations	11,179,214
Gallons (AVMT ÷ gallons)	3,122,649,464	District 1 %	46%
Gallons of Gasoline (73% total gallons)	2,279,534,109	Total State Vehicle Registration Revenue	$2,144,218,284
Gallons of Special Fuels (27% of total gallons)	843,115,355	Total Estimated Revenue	$980,540,364
Estimated Revenue from Gasoline (gallons x $0.387)	$882,179,700		
Estimated Revenue from Special Fuels (gallons x $0.462)	$389,519,294		
Total Estimated Revenue	$1,271,698,994		
Total State MFT Revenue	$2,381,062,186	Total State Veh Reg Revenue	$2,144,218,284
District 1 % of State	53%	District 1 % of State	46%

Source: Author's calculations using IDOT, 2020b (AVMT); EIA, 2022 (MPG); IDOR, 2021b (gallons breakdown); IDOR, 2021c (fuel rates); IDOR, 2021a (total MFT revenue); ILSOS, 2021 (registrations); IL Comptroller, 2021b (veh reg revenues)

The MFT calculation uses AVMT and calculates estimated gallons of fuel purchased using an average miles per gallon (MPG). The MPG figure is the national average for all vehicles. While this is imperfect, as different vehicles can have drastically different fuel efficiencies – most notably passenger vehicles compared to large trucks – it is sufficient to provide a general estimate. Total gallons are then divided between gasoline and special fuels, using existing breakdown of gallons sold in the state. Those figures are then multiplied by their respective values for FY21 to calculate total revenue. In the end, it is

estimated that District 1 generates over $1.2 billion in MFT revenue, accounting for 53% of total state MFT revenue.

The vehicle registrations calculation was more simplistic, only multiplying the District 1 percent of total vehicle registrations by total state vehicle registration revenue. While this is the most simplistic method to estimate District 1 revenue, after consideration of other methods, it was determined to be the most effective. An alternate method was considered that used the registration counts for each vehicle type multiplied by their appropriate fee to estimate revenue. However, vehicle registration fees vary widely for some classes of vehicles. For example, fiscal truck registrations range anywhere from $154 to $2,890, depending on the type and weight of each truck. Additionally, the "Other" category of vehicles shown in Figure 20 accounts for a large range of vehicles, from specialty plates to municipal vehicles or recreational vehicles. The appropriate breakdown of these vehicles for District 1 specifically is not known, therefore it would've required many assumptions. Finally, state vehicle registration revenue is reported in one line item that is assumed to take into account all registrations, plus replacement registrations, which are not reflected in the total registration counts. As such, even if registration revenue was calculated for each vehicle type, it would not account for any other fees reported, thus represent an incorrect value of estimated revenue for District 1.

In the end, it was decided that simply multiplying the District 1 percent of total vehicle registrations by the state's total vehicle registration revenue would provide the best estimate. As such, it is estimated that District 1 accounts for 46% of total vehicle registration revenue, totaling $980 million.

Figure 23 provides a final summary of the proportion District 1 accounts for in terms of population and travel statistics compared to highway programming and spending. While District 1 accounts for over 50% of MFT revenue and AVMT and over 66% of the population, highway construction programming and spending remains largely in the range of 30% to 40%.

Figure 23: Summary of Proportion of District 1 Population, Travel, Highway Programming, and Highway Construction Spending

District 1 Statistics	
Population	66%
Annual Vehicle Miles Traveled	55%
Vehicle Registrations	46%
Estimated MFT Revenue	53%
District 1 Highway Programming and Spending	
MYP Programming	35% - 43%
MYP Avg over 14 Years	40%
IDOT Letting	31% - 51%
IDOT Letting Avg over 13 Years	38%

Source: Summary of Figures 18, 19, 20, and 21

CONCLUSION

With the passage of the historic Rebuild Illinois capital plan in 2019, Illinois transportation funding has increased substantially. As such, it is important to ensure that these revenues are being used on transportation projects in a timely manner. This report summarized IDOT revenues and their distribution, estimated Rebuild Illinois revenues, and compared these to IDOT expenditures over recent years. While it is clear how some Rebuild Illinois revenues are being spent, some questions remain, as summarized below.

REVENUES

Fee increases from Rebuild Illinois resulted in an additional $1.44 billion in FY20 and $1.97 billion in FY21 for transportation funding across the state. This funding was made up of increases to the motor fuel tax (MFT), vehicle registration fees, and certificate of title fees. These revenues ultimately support state funding through the Road Fund and State Construction Account, transit funding through two new state funds, and a distribution to local governments statewide.

USE OF REBUILD ILLINOIS FUNDS

While IDOT expenditures on the whole reflect increased spending in FY20 and FY21, further analysis indicates less construction spending through the Road Fund than would be expected. Rebuild Illinois revenues are estimated to generate an additional $340 million in FY20 and $783 million in FY21 for the Road Fund. However, IDOT expenditures in FY20 are actually less than expenditures in FY19 and FY21 expenditures only showed an increase of $65 million over FY19, the last year prior to the adoption of Rebuild Illinois. When considering Road Fund expenditures on the whole – including other agencies beyond IDOT and statutory transfers – FY21 expenditures are $556 million more than FY19. However, the majority of this increase can be attributed to interfund borrowing in which the Road Fund loaned the General Revenue Fund $400 million in FY21. Consequently, increased expenditures under the Road Fund largely cannot be attributed to increased construction spending because of Rebuild Illinois.

However, the State Construction Account fully uses revenues from Rebuild Illinois. Rebuild Illinois revenues are estimated to generate an additional $530 million in FY20 and $567 million in FY20 for the State Construction Account. IDOT expenditures in FY20 are $611 million more compared to FY19 and FY21 expenditures are $610 million more than FY19. This indicates that increased revenues from Rebuild Illinois were appropriately spent.

Transit fund expenditures do not match Rebuild Illinois revenues. Two new funds were created to support transit capital spending – the RTA Capital Improvement Fund and the Downstate Mass Transportation Capital Improvement Fund. Both funds receive funding from the increase to the motor fuel tax. Despite these revenues being available, neither fund had expenditures in FY20 and only the RTA Capital Improvement Fund showed $63 million in expenditures in FY21. This is significantly below the estimated $213 million that should be available in FY21. While this indicates Rebuild Illinois revenues are not being appropriately spent in a timely manner, this could partially be due to administrative delays or requirements from local transit agencies. Regardless, it is worth exploring more why this funding has not been spent or transferred to eligible transit agencies.

Bond funding has increased since Rebuild Illinois, however a significant amount of funding remains left to be spent. Four bond funds – Transportation Bond Series A, B, and D and the Multimodal Transportation Fund – support transportation projects across Illinois. Rebuild Illinois increased bonding

authority for all four of these bond funds, however only Series A and the Multimodal Transportation Fund can be attributed to Rebuild Illinois projects due to how funding was appropriated. For Transportation Bond Series A, "released" funds – indicating funding available to be spent, but not reflected in expended dollars – totaled 9% and 17% of total appropriated funds for FY20 and FY21, respectively. The largest increase in expenditures was seen in grants to local governments under Transportation Bond Series A – totaling $1 billion between FY20 and FY21 – which is distributed to counties, municipalities, and townships statewide. Additionally, the newly created Multimodal Transportation Bond Fund has "released" funds totaling over $1.5 billion for FY20 and $1.8 billion for FY21, 34% and 40% of total appropriated dollars for each year, respectively. Overall, this indicates that while some Rebuild Illinois projects have begun, there is still a significant amount of funding that has yet to be released.

PROJECT SPENDING

IDOT multi-year programs (MYPs) are analyzed to understand project specific programmed funding. MYP total programmed funding ranges from a low of $8.5 billion for FY16-21 to a high of $21.7 billion for FY20-25, in constant 2021 dollars. MYP funding more than doubled between FY19 and FY20 due to the passage of Rebuild Illinois. This made state funding account for 58% of total MYP programming that year, up from only 12% in FY19.

IDOT project letting data provides IDOT highway construction expenditures by year, which totaled between $1.3 billion and $3.2 billion annually from 2009 through 2021, in constant 2021 dollars. 2010 had the greatest level of spending, with 2009 and 2020 the next highest at $2.7 billion and $2.3 billion, respectively.

Annual Illinois Tollway capital program expenditures totaled between $164 million and $1.7 billion annually from 2011 through 2021, in constant 2021 dollars. 2015 had the highest level of investment.

IDOT's District 1 – including Cook, DuPage, Kane, McHenry, and Will Counties – accounts for the largest percentage of highway construction programming and spending in Illinois. District 1 projects summarized in the MYP account for between 35% and 43% of total IDOT programming each year, averaging 40% for FY09-12 to FY22-27. District 1 comprises between 31% to 51% of total construction spending statewide when analyzing IDOT letting data, averaging 38% for 2009 to 2021.

A discrepancy in MYP funding was discovered. The MYP analysis was performed by manually inputting project totals into a spreadsheet to understand district-by-district programming. In doing so, it was discovered that the total value of all projects listed in each MYP does not match the MYP total investment referenced in the introduction section of each document. In all but one year, the total reported in the summary text is larger than the total of all projects listed in the same document. Since the FY17-22 MYP, the discrepancies are all around or greater than $1 billion, with FY20-25 greater than $2 billion. While some inconsistencies can be expected, consistent differences over $1 billion are substantial and worth exploring.

REFERENCES

Commission on Government Forecasting and Accountability (COGFA). (2019). *State of Illinois Budget Summary Fiscal Year 2020*.

Commission on Government Forecasting and Accountability (C0GFA). (2021). *Illinois Tax Handbook for Legislators*.

Federal Reserve Bank of Minneapolis. (2022). *Consumer Price Index*.

Illinois Comptroller. (2022) (a). *State Expenditures by Agency*.

Illinois Comptroller. (2022) (b). *State Revenues by Revenue Source*.

Illinois Comptroller. (2022)(c). *Appropriation Inquiries and Account Codes*.

Illinois Department of Revenue (IDOR). (2021) (a). *Monthly Collections Remitted to the State Comptroller.*

Illinois Department of Revenue (IDOR). (2021) (b). *Motor Fuel Tax Adjusted Filing Period Motor Fuel Gallonage Breakdown for Calendar Years 2019-2021*.

Illinois Department of Revenue (IDOR). (2021) (c). *Motor Fuel Tax Rates and Fees*.

Illinois Department of Transportation (IDOT). (2008). *FY 2009-2014 Proposed Highway Improvement Program.*

Illinois Department of Transportation (IDOT). (2009). *FY 2010-2015 Proposed Highway Improvement Program.*

Illinois Department of Transportation (IDOT). (2010). *FY 2011-2016 Proposed Highway Improvement Program.*

Illinois Department of Transportation (IDOT). (2011). *FY 2012-2017 Proposed Highway Improvement Program.*

Illinois Department of Transportation (IDOT). (2012). *FY 2013-2018 Proposed Multi-Modal Transportation Improvement Program.*

Illinois Department of Transportation (IDOT). (2013). *FY 2014-2019 Proposed Multi-Modal Transportation Improvement Program.*

Illinois Department of Transportation (IDOT). (2014). *FY 2015-2020 Proposed Multi-Modal Transportation Improvement Program.*

Illinois Department of Transportation (IDOT). (2015). *FY 2016-2021 Proposed Highway Improvement Program.*

Illinois Department of Transportation (IDOT). (2016). *FY 2017-2022 Proposed Highway Improvement Program.*

Illinois Department of Transportation (IDOT). (2017). *FY 2018-2023 Proposed Highway Improvement Program.*

Illinois Department of Transportation (IDOT). (2018). *FY 2019-2024 Proposed Highway Improvement Program.*

Illinois Department of Transportation (IDOT). (2019). *FY 2020-2025 Proposed Highway Improvement Program.*

Illinois Department of Transportation (IDOT). (2020). *FY 2021-2026 Proposed Highway Improvement Program.*

Illinois Department of Transportation (IDOT). (2020) (b). *2020 Illinois Travel Statistics*.

Illinois Department of Transportation (IDOT). (2021) (a). *Motor Fuel Tax (MFT) Funds Distribution: Local Rebuild Illinois Bond Funds*.

Illinois Department of Transportation (IDOT). (2021) (b). *FY 2022-2027 Proposed Highway Improvement Program.*

Illinois Department of Transportation (IDOT). (2021) (c). *Transportation Bulletin Archives*.

Illinois Economic Policy Institute (ILEPI). (2021) (a). *Rebuild Illinois Funding Breakdown: Local Governments*.

Illinois Economic Policy Institute (ILEPI). (2020). *HB142 Fact Sheet: Rebuild Illinois Bonding Authority*.

Illinois Economic Policy Institute (ILEPI). (2021) (b). *Rebuild Illinois Transportation Funding*.

Illinois Motor Fuel Tax Law. (35 ILCS 505).

Illinois Secretary of State (ILSOS). (2021). *2021 Registration Counts by County*.

Illinois Tollway. (2011). *2011 Budget Analysis Quarterly Financial Review, October 1-December 31, 2011.*

Illinois Tollway. (2012). *2012 Budget Analysis Quarterly Financial Review, October 1-December 31, 2012.*

Illinois Tollway. (2013). *2013 Budget Analysis Quarterly Financial Review, October 1-December 31, 2013.*

Illinois Tollway. (2014). *2014 Budget Analysis Quarterly Financial Review, October 1-December 31, 2014.*

Illinois Tollway. (2015). *2015 Budget Analysis Quarterly Financial Review, October 1-December 31, 2015.*

Illinois Tollway. (2016). *2016 Budget Analysis Quarterly Financial Review, October 1-December 31, 2016.*

Illinois Tollway. (2017). *2017 Budget Analysis Quarterly Financial Review, October 1-December 31, 2017.*

Illinois Tollway. (2018). *2018 Budget Analysis Quarterly Financial Review, October 1-December 31, 2018.*

Illinois Tollway. (2019). *2019 Budget Analysis Quarterly Financial Review, October 1-December 31, 2019.*

Illinois Tollway. (2020). *2020 Budget Analysis Quarterly Financial Review, October 1-December 31, 2020.*

Illinois Tollway. (2021). *2021 Budget Analysis Quarterly Financial Review, July 1-September 20, 2021.*

U.S. Census Bureau. (2022). *Table P3: Race for the Population 18 Years and Over*.

U.S. Energy Information Administration (EIA). (2022). *Motor Vehicle Mileage, Fuel Consumption, and Fuel Economy*.

APPENDICES

APPENDIX A

Appendix A details the process used to examine IDOT expenditures. Six specific funds are analyzed: the Road Fund, State Construction Account, Transportation Bond Series A, Transportation Bond Series B, Transportation Bond Series D, and the Multimodal Transportation Bond.

The following tables show total expenditures for each fund, then line items under expenditures of the Department of Transportation, and finally analyze expenditures within each of those line items that account for highway construction funding.

FOR EXAMPLE: under the Road Fund, the first table shows all expenditures by state agency from the Road Fund. The second table shows all expenditures under the Department of Transportation. The next five tables show the details of expenditures under the five highlighted line items. It is within these final five tables that highway construction expenditures can be identified, which are shown in blue text.

This pattern holds true for all subsequent fund analyses. It should be noted that while not all line items under the Department of Transportation are expanded upon and shown below, each one was reviewed to determine if highway construction costs were present. Only line items that included expenditures related to Highway Construction are shown below.

Red Text: indicates that line item is expanded on in additional tables below. Follow the "Code" number.

Blue Text: indicates what the author identified as Highway Construction Spending and is included in the Highway Construction totals shown in the report.

Purple Text: indicates a Grant to Local Government and is included in the Grants to Local Government totals shown in the report.

Orange Text: indicates a Transportation Grant and is included in the Transportation Grant totals shown in the report.

ROAD FUND EXPENDITURES

Expenditures by State Agency

ROAD FUND					
Code	Agency	FY18	FY19	FY20	FY21
494	TRANSPORTATION	$2,391,724,164	$2,338,690,507	$2,132,244,981	$2,404,160,861
799	STATUTORY TRANSFERS	$606,798,344	$694,679,316	$786,240,337	$1,135,106,679
416	CENTRAL MANAGEMENT	$124,992,000	$117,960,000	$161,533,300	$171,508,400
350	SECRETARY OF STATE	$1,316,324	$1,755,034	$1,656,471	$1,885,972
510	EXECUTIVE ETHICS COMMISSION				$732,455
360	COMPTROLLER	$357,583	$237,292	$309,296	$309,908
528	COURT OF CLAIMS	$12,300	$1,500	$235,685	$28,485
427	EMPLOYMENT SECURITY	$3,938,792	$4,000,000	$4,000,000	$0
	TOTAL	$3,129,139,507	$3,157,323,649	$3,086,220,070	$3,713,732,761

Expenditures Under Department of Transportation (Code 494)

TRANSPORTATION DETAIL					
Code	Object of Expenditure	FY18	FY19	FY20	FY21
7900	HGHWY/WTRWY CONSTRUC-LUMP SUM	$1,255,641,293	$1,114,267,599	$927,488,265	$1,161,996,156
1120	REGULAR POSITIONS	$383,168,224	$385,753,350	$391,514,649	$401,030,841
1161	STATE EMPLOYEE RETIREMENT	$206,420,367	$211,933,295	$227,247,159	$236,527,991
1900	LUMP SUMS AND OTHER PURPOSES	$78,911,445	$105,402,652	$102,025,635	$115,359,008
1200	CONTRACTUAL SERVICES	$88,272,722	$88,580,486	$89,343,640	$85,477,270
4491	SHARED REVENUE PAYMENTS	$35,814,300	$35,814,300	$35,814,300	$60,168,100
4900	AWARDS & GRANTS - LUMP SUM	$64,740,987	$60,723,095	$70,493,437	$59,256,683
1500	EQUIPMENT	$51,133,021	$73,902,447	$31,352,395	$52,090,369
1800	OPERATION OF AUTO EQUIPMENT	$46,621,165	$50,655,491	$47,714,561	$47,350,323
1300	COMMODITIES	$22,269,054	$38,904,832	$49,819,685	$42,170,802
1170	SOC SEC/MEDICARE CONTRIBUTIONS	$31,463,496	$31,682,041	$31,810,297	$32,800,755
1130	EXTRA HELP	$29,744,281	$29,568,829	$24,517,810	$28,258,080
6900	PERMANENT IMPROVEMENT-LUMP SUM	$14,073,720	$30,874,432	$22,281,252	$23,724,820
1600	ELECTRONIC DATA PROCESSING	$15,322,924	$20,749,762	$23,692,017	$17,881,218
4472	TRANSPORTATION GRANTS	$29,473,856	$31,619,961	$30,086,203	$16,040,078
1700	TELECOMMUNICATION	$8,921,927	$9,936,673	$13,200,191	$14,424,096
7700	HIGHWAY AND WATERWAY CONSTRUCT	$22,588,719	$12,007,808	$7,946,948	$3,545,073
4400	AWARDS AND GRANTS	$3,747,000	$3,747,000	$4,072,700	$3,499,737
4429	TORT CLAIMS	$1,475,542	$496,356	$417,703	$1,770,657
1290	TRAVEL	$1,579,501	$1,447,207	$1,129,951	$424,782
1302	PRINTING	$316,130	$610,938	$275,180	$356,406
9939	REFUNDS, N.E.C.	$24,489	$11,954	$1,002	$7,618
	TOTAL	$2,391,724,164	$2,338,690,507	$2,132,244,981	$2,404,160,861

Expenditures Under Hghwy/Wtrwy Construct-Lump Sum (Code 7900)

HGHWY/WTRWY CONSTRUC-LUMP SUM DETAIL					
Code	Object	FY18	FY19	FY20	FY21
7721	CONSTRUCTION/IMPROVEMENT HGHWY	$879,850,144	$730,630,605	$633,753,185	$835,352,013
7728	ARCHIT/ENGINEERING FEES-HGHWY	$157,902,459	$177,941,097	$159,173,674	$144,812,662
7725	REPAIR AND MAINTENANCE-HGHWY	$157,050,110	$142,195,976	$79,256,971	$119,848,458
7743	ARCHIT/ENGINR/PROF SERV-RR	$20,002,852	$30,014,508	$25,235,227	$27,858,518
1248	BUILDING & GROUND MAINTENANCE	$8,363,208	$8,628,555	$9,485,943	$10,042,885
7741	CONSTRUCT/IMPROVEMENT RAILROAD	$4,033,569	$4,509,811	$5,432,944	$5,736,296
1289	CONTRACTUAL SERVICES, N.E.C.	$5,148,968	$4,671,587	$4,772,600	$4,773,072
7711	LAND/RIGHTS OF WAY HIGHWAY	$11,868,559	$3,616,306	$1,499,290	$4,390,313
1223	REPAIR & MAINT, REAL PROPERTY	$1,557,607	$1,969,177	$1,444,076	$1,946,814
1721	RENTAL, TELEPHONE SERV & EQUIP	$1,296,848	$1,499,486	$1,552,620	$1,618,774
1245	PROFESSIONAL/ARTISTIC SERV NEC	$1,853,007	$1,162,000	$851,595	$1,258,929
4470	GRANTS TO LOC GOVERNMENTS,NEC	$826,000	$1,925,262	$432,749	$1,096,579
1230	IN-HOUSE REPAIR & MAINTENANCE	$764,142	$690,769	$565,412	$906,954
1540	MACHINE IMPLEMENTS/MAJR TOOLS	$665,081	$681,814	$791,331	$560,539
1599	EQUIPMENT, N.E.C.	$160,493	$458,171	$193,049	$558,732
1392	FORAGE FARM & GARDEN SUPPLIES	$345,166	$635,474	$673,307	$484,020
1242	AUDITING & MANAGEMENT SERVICE	$1,000		$500	$181,503
1991	INTEREST-PROMPT PAYMENT CY	$10,007	$20,749	$24,875	$102,731
6625	REMODELING AND RENOVATION	$2,656,772	$1,628,702	$796,177	$77,579
1224	REPAIR & MAINT,MACHINERY	$6,156	$11,148	$26,853	$77,144
7713	LAND RELOCATION COSTS-HGHWY	$56,378		$244,158	$64,669
1284	COMPUTER SOFTWARE	$24,900	$132,130	$82,922	$60,991
1550	SCIENTIFIC INSTRUMENTS		$268,749	$215,059	$49,885
1225	REPAIR & MAINT OF EDP EQUIP		$2,378	$2,933	$27,238
1722	RENTAL,DATA COMMUNICATION SERV	$1,555	$1,879	$27,896	$26,792
1279	EMPLOYEE TUITION AND FEES				$24,475
4480	GRANTS TO NON-PROFIT ORGS				$17,421
1293	IN-STATE TRAVEL, VENDORS	$6,933	$5,277	$10,639	$10,959
1515	EDP EQUIPMENT	$48,121	$100,501	$2,491	$8,242
1291	IN-STATE TRAVEL,EMPLOYEE REIMB	$4,224	$6,578	$18,750	$4,960
1277	ASSOCIATION DUES	$4,194	$4,897	$2,528	$3,645
1398	EQUIPMENT N.E.C. NOT OVER $100			$2,095	$2,906

Expenditures Under Hghwy/Wtrwy Construct-Lump Sum (Code 7900)	1239	RENTAL, N.E.C.	$53,394	$25,417	$103,770	$1,950
	1399	COMMODITIES, N.E.C.	$16,971	$19,027	$23,245	$1,585
	1395	SMALL TOOLS NOT EXCEEDING $100	$1,066	$663	$50	$1,531
	7710	ATTORNEY FEES	$317,338	$82,445	$8,663	$1,500
	6628	ARCHITECTURAL/ENGINEERING FEES	$187,679	$72,112	$27,367	$1,118
	1202	CONTRACT REIMBURSE TO EMPLOYEE		$269	$2,921	$622
	1234	RENTAL, MACHINERY & MECH EQUIP	$5,660	$11,619	$150	$482
	1274	REG/CONF EXP, VENDOR PAYMENTS	$21,625	$34,393	$54,784	$299
	7712	LAND,,APPRAISAL HGHWY	$234,185	$96,408	$51,397	$292
	1266	COURT REPORTING & FILING SERV				$77
	9999	OTHER, N.E.C.	$0	$0	$0	$0
	6621	STRUCTURE ACQUISITION/CONS'T		$403,511	$462,800	
	1236	FACILITIES MGT REVOL FUND PAY			$106,313	
	1229	REPAIR AND MAINTENANCE, N.E.C.		$131	$28,674	
	1350	MEDICAL & LABORATORY SUPPLIES			$27,888	
	1237	RENTAL, FILM/AUDIO/VISUAL AIDS	$8,389	$13,848	$5,367	
	1292	OUT-OF-STATE TRAVEL, EMPLOYEES		$6,617	$5,180	
	1294	OUT-OF-STATE TRAVEL,VENDORS			$3,428	
	1304	OFFICE AND LIBRARY SUPPLIES	$146	$2,601	$1,883	
	1560	LIBRARY BOOKS		$1,990	$1,360	
	1687	EDP EQUIPMENT	$12,340		$1,332	
	1370	WEARING APPAREL		$494	$945	
	1276	REGISTRATION FEES/CONF EXPENSE			$400	
	1391	HOUSEHOLD & CLEANING SUPPLIES		$85	$151	
	1273	ADVERTISING		$10,000	$75	
	1510	OFFICE FURNITURE AND EQUIPMENT		$23,030	-$1,725	
	1799	TELECOMMUNICATION SERVICES,NEC		$19,153		
	1233	RENTAL, REAL PROPERTY		$11,297		
	1729	RENTAL,OTHER COMMUNICATION SRV		$3,244		
	1360	FOOD SUPPLIES		$22		
	9939	REFUNDS, N.E.C.	$31,558	$15,636		
	1308	EDUC & INSTRUCTIONAL SUPPLIES	$224,694			
	6660	UTILITIES	$16,342			
	1286	TRAVEL - NON/STATE EMPLOYEES	$1,453			
		TOTAL	$1,255,641,293	$1,114,267,599	$927,488,265	$1,161,996,156

	LUMP SUMS AND OTHER PURPOSES DETAIL					
	Code	Object	FY18	FY19	FY20	FY21
Expenditures Under Lump Sums and Other Purposes (Code 1900)	4472	TRANSPORTATION GRANTS	$17,031,825	$26,746,626	$26,828,272	$35,783,574
	1245	PROFESSIONAL/ARTISTIC SERV NEC	$11,362,893	$14,433,645	$9,507,928	$15,084,256
	7725	REPAIR AND MAINTENANCE-HGHWY	$2,696,803	$11,178,072	$13,446,614	$13,859,074
	1242	AUDITING & MANAGEMENT SERVICE	$10,062,717	$11,334,704	$10,094,013	$12,490,286
	1120	REGULAR POSITIONS	$9,734,271	$9,704,828	$7,535,591	$8,872,356
	1273	ADVERTISING	$2,209,440	$6,529,233	$4,915,273	$4,946,518
	1161	STATE EMPLOYEE RETIREMENT	$4,931,034	$5,011,677	$4,093,194	$4,866,541
	1223	REPAIR & MAINT, REAL PROPERTY	$7,007,661	$5,742,216	$5,225,243	$3,773,293
	1710	REPAIR/MAINT,TELEPHONE & OTHER	$1,979,172	$2,040,127	$2,040,302	$2,816,160
	7721	CONSTRUCTION/IMPROVEMENT HGHWY	$5,191,852	$2,983,987	$2,940,067	$2,077,360
	1750	TELEPHONE/COMMUNICATION EQUIP	$10,064		$877,845	$1,956,366
	1799	TELECOMMUNICATION SERVICES,NEC	$740,214	$1,150,148	$2,789,797	$1,258,471
	1284	COMPUTER SOFTWARE	$515,429	$917,783	$1,329,957	$1,159,145
	1893	REPAIR AND MAINTENANCE AUTOS	$525,522	$529,086	$510,781	$673,195
	1540	MACHINE IMPLEMENTS/MAJR TOOLS	$1,474	$25,542	$922,813	$601,296
	1522	OTHER MOTOR VEHICLES	$124,022	$380,373	$64,629	$581,132
	1599	EQUIPMENT, N.E.C.	$508,222	$948,244	$561,793	$563,269
	1277	ASSOCIATION DUES	$522,708	$844,101	$369,953	$510,948
	1252	ELECTRICITY	$358,072	$586,957	$418,906	$508,193
	1550	SCIENTIFIC INSTRUMENTS	$94,138	$20,386	$327,386	$483,897
	1222	REPAIR & MAINTAIN OF AIRCRAFT				$305,655
	6627	ASBESTOS ABATEMENT COST	$226,875	$508,843	$1,860,964	$299,488
	1510	OFFICE FURNITURE AND EQUIPMENT	$2,719	$2,676	$6,651	$294,688
	1896	GASOLINE, OIL AND ANTIFREEZE	$262,580	$275,998	$186,675	$261,502
	1730	PARTS/SUPPLIES,TELEPHONE EQUIP	$509,873	$705,637	$2,717,124	$169,727
	1289	CONTRACTUAL SERVICES, N.E.C.	$821,923	$36,682	$376,852	$160,078
	1170	SOC SEC/MEDICARE CONTRIBUTIONS	$211,374	$213,503	$122,717	$142,122
	1399	COMMODITIES, N.E.C.	$20,611	$33,263	$17,062	$131,089
	1145	CONTRACTUAL PAYROLL EMPLOYEES	$112,260	$106,793	$100,576	$108,943
	1224	REPAIR & MAINT,MACHINERY	$18,385	$632,684	$38,337	$97,225
	1293	IN-STATE TRAVEL, VENDORS	$56,217	$48,740	$32,763	$78,417
	1722	RENTAL,DATA COMMUNICATION SERV	$23,604	$49,955	$55,871	$51,906
	1350	MEDICAL & LABORATORY SUPPLIES			$27	$46,231
	1230	IN-HOUSE REPAIR & MAINTENANCE	$122,248	$399,357	$61,397	$44,377
	1991	INTEREST-PROMPT PAYMENT CY	$256	$4,235	$9,444	$39,749
	1291	IN-STATE TRAVEL,EMPLOYEE REIMB	$51,769	$66,803	$30,777	$32,871
	1521	PASSENGER AUTOMOBILES	$9,600		$19,800	$32,848
	1515	EDP EQUIPMENT	$389,791	$79,589	$7,352	$29,023
	1275	SUBSCRIPTION/INFORMATION SERV	$13,181	$22,262	$74,641	$26,898
	1231	RENTAL, OFFICE EQUIPMENT	$19,045	$23,200	$23,261	$20,781
	1302	PRINTING	$85,191	$92,650	$343,067	$19,964
	1398	EQUIPMENT N.E.C. NOT OVER $100	$15,543	$11,983	$15,845	$16,378
	1229	REPAIR AND MAINTENANCE, N.E.C.	$11,363	$73,102	$172,400	$13,036
	1729	RENTAL,OTHER COMMUNICATION SRV	$9,648	$3,825	$127,800	$11,504
	1370	WEARING APPAREL	$26,673	$35,068	$9,706	$8,769
	1721	RENTAL, TELEPHONE SERV & EQUIP	$48,042	$25,700	$2,814	$8,483

Expenditures Under Lump Sums and Other Purposes (Code 1900)	1175	STATE MEDICARE CONTRB CONTR PY	$8,588	$8,170	$7,694	$8,334
	1391	HOUSEHOLD & CLEANING SUPPLIES	$144	$1,140	$1,896	$6,284
	1395	SMALL TOOLS NOT EXCEEDING $100	$1,634	$7,065	$6,611	$5,253
	1279	EMPLOYEE TUITION AND FEES	$2,245			$3,933
	6620	STRUCTURES DEMOLITION/REMOVAL			$8,203	$2,872
	1239	RENTAL, N.E.C.	$19,585	$10,080	$27,623	$2,768
	1276	REGISTRATION FEES/CONF EXPENSE	$175	$10,529	$2,834	$2,585
	1274	REG/CONF EXP, VENDOR PAYMENTS	$62,855	$10,290	$28,340	$2,353
	1129	STATE PAID RETIREMENT CONTRIB	$281	$782	$1,067	$2,232
	1264	EXPENSE REIMBURSE CP EMPLOYEES		$1,032	$1,441	$1,716
	1248	BUILDING & GROUND MAINTENANCE	$44	$350	$1,005	$1,453
	1394	OFFICE EQUIP LESS THAN $100	$144	$246		$1,193
	1304	OFFICE AND LIBRARY SUPPLIES	$2,491	$6,193	$6,378	$875
	1202	CONTRACT REIMBURSE TO EMPLOYEE	$1,480	$861	$560	$561
	1894	PARTS AND FITTINGS, AUTOS	$14,880	$3,340	$3,812	$258
	1397	CLEANING EQUIP, NOT OVER $100		$57	$184	$177
	1308	EDUC & INSTRUCTIONAL SUPPLIES	$10,531	$19,072	$4,346	$125
	9999	OTHER, N.E.C.	$0	$0	$0	$0
	6628	ARCHITECTURAL/ENGINEERING FEES			$609,290	
	1292	OUT-OF-STATE TRAVEL, EMPLOYEES	$56,574	$87,167	$39,961	
	1234	RENTAL, MACHINERY & MECH EQUIP			$31,900	
	1225	REPAIR & MAINT OF EDP EQUIP			$10,806	
	1286	TRAVEL - NON/STATE EMPLOYEES	$430	$2,090	$8,417	
	1898	AUTOMOTIVE SERVICES, NEC			$5,379	
	1237	RENTAL, FILM/AUDIO/VISUAL AIDS	$6,845		$1,254	
	1233	RENTAL, REAL PROPERTY			$1,114	
	4453	REIMBUR TO GOVERNMENTAL UNITS		$656,536		
	1128	BONUS PAYMENTS	$31,000	$12,488		
	1899	AUTOMOTIVE EXPENSE, N.E.C.	$374	$2,931		
	1295	TRAVEL,MILEAGE REIMBURSEMENTS	$5,044	$1,239		
	1294	OUT-OF-STATE TRAVEL,VENDORS		$418		
	1205	FREIGHT, EXPRESS AND DRAYAGE	$2,930	$291		
	1687	EDP EQUIPMENT	$5,820			
	1272	NON-EMPLOYEE TRAVEL-VENDOR PMT	$1,049			
		TOTAL	$78,911,445	$105,402,652	$102,024,392	$115,360,052

	AWARDS AND GRANTS LUMP SUM DETAIL					
	Code	Object	FY18	FY19	FY20	FY21
Expenditures Under Awards and Grants Lump Sum (Code 4900)	1245	PROFESSIONAL/ARTISTIC SERV NEC	$48,134,114	$43,523,553	$43,417,471	$24,716,661
	4472	TRANSPORTATION GRANTS	$5,020,382	$5,680,232	$12,023,009	$16,378,353
	7741	CONSTRUCT/IMPROVEMENT RAILROAD			$830,194	$14,428,658
	4453	REIMBUR TO GOVERNMENTAL UNITS	$7,655,432	$7,880,631	$8,016,990	$7,468,330
	4480	GRANTS TO NON-PROFIT ORGS	$1,710,265	$1,961,798	$1,907,555	$2,310,861
	7743	ARCHIT/ENGINR/PROF SERV-RR	$346,542		$722,229	$884,726
	4429	TORT CLAIMS	$623,245	$732,650	$915,913	$413,810
	7735	REPAIR & MAINTENACE-AERONAUTIC	$46,196	$363,164	$790,423	$387,013
	4487	COMBINED SETTLEMENT/ATTORNEY	$869,193	$406,450	$1,546,586	$364,950
	7734	CONSTRCTION/IMPROVE AERONAUTIC	$75,225	$174,617	$322,049	$275,059
	4443	TAXABLE GRANTS PMNTS TO RECIP				$22,753
	1993	INTERFUND CASH TRANSFERS	$259,501			$309
	1991	INTEREST-PROMPT PAYMENT CY			$1,021	
	1994	INTEREST PENALTY	$892			
	9999	OTHER, N.E.C.	$0	$0	$0	$0
			$64,740,987	$60,723,095	$70,493,437	$67,651,483

	TRANSPORTATION GRANTS DETAIL					
	Code	Object	FY18	FY19	FY20	FY21
Expenditures Under Transportation Grants (Code 4472)	4472	TRANSPORTATION GRANTS	$29,473,856	$31,619,961	$30,086,203	$16,040,078
	9999	OTHER, N.E.C.	$0	$0	$0	$0

	HIGHWAY AND WATERWAY CONSTRUCT DETAIL					
	Code	Object	FY18	FY19	FY20	FY21
Expenditures Under Highway and Waterway Construct (Code 7700)	7721	CONSTRUCTION/IMPROVEMENT HGHWY	$10,722,505	$5,828,847	$3,788,176	$2,149,401
	7728	ARCHIT/ENGINEERING FEES-HGHWY	$2,419,759	$2,499,453	$2,402,495	$898,583
	7725	REPAIR AND MAINTENANCE-HGHWY	$9,389,988	$2,558,733	$1,630,249	$461,764
	7711	LAND/RIGHTS OF WAY HIGHWAY	$7,740	$1,096,671	$91,641	$34,401
	7741	CONSTRUCT/IMPROVEMENT RAILROAD	$48,727	$24,103	$34,387	
	1991	INTEREST-PROMPT PAYMENT CY				$924
	9999	OTHER, N.E.C.	$0	$0	$0	$0
		TOTAL	$22,588,719	$12,007,808	$7,946,948	$3,545,073

STATE CONSTRUCTION ACCOUNT EXPENDITURES

Expenditures by State Agency

STATE CONSTRUCTION ACCOUNT					
Code	Agency	FY18	FY19	FY20	FY21
494	TRANSPORTATION	$557,445,483	$628,850,202	$1,239,721,917	$1,238,338,632
799	STATUTORY TRANSFERS	$27,323	$270,106,236	$250,033,539	$129,461
	TOTAL	$557,472,806	$898,956,438	$1,489,755,456	$1,238,468,093

Expenditures Under Dept. of Transportation (Code 494)

TRANSPORTATION DETAIL					
Code	Object of Expenditure	FY18	FY19	FY20	FY21
7700	HIGHWAY AND WATERWAY CONSTRUCT	$557,445,483	$628,850,202	$1,239,721,917	$1,238,338,632

Expenditures Under Highway and Waterway Construct (Code 7700)

HIGHWAY AND WATERWAY CONSTRUCT DETAIL					
Code	Object	FY18	FY19	FY20	FY21
7721	CONSTRUCTION/IMPROVEMENT HGHWY	$440,660,109	$514,642,614	$958,466,872	$995,716,913
7725	REPAIR AND MAINTENANCE-HGHWY	$23,574,796	$48,214,951	$183,717,038	$112,461,602
7728	ARCHIT/ENGINEERING FEES-HGHWY	$57,786,705	$44,598,839	$70,759,594	$110,556,164
7711	LAND/RIGHTS OF WAY HIGHWAY	$19,846,041	$11,565,846	$18,792,246	$12,310,965
7712	LAND,,APPRAISAL HGHWY	$5,294,785	$6,247,297	$5,209,345	$4,843,862
7710	ATTORNEY FEES	$3,440,140	$3,024,979	$2,527,993	$2,081,755
7713	LAND RELOCATION COSTS-HGHWY	$6,838,031	$547,372	$238,409	$349,616
1991	INTEREST-PROMPT PAYMENT CY	$4,876	$8,304	$10,421	$17,755
9999	OTHER, N.E.C.	$0	$0	$0	$0
	TOTAL	$557,445,483	$628,850,202	$1,239,721,917	$1,238,338,632

TRANSPORTATION BOND, SERIES A EXPENDITURES

Expenditures by State Agency

TRANSPORTATION BOND, SERIES A					
Code	Agency	FY18	FY19	FY20	FY21
494	TRANSPORTATION	$25,635,020	$297,523	$250,271,760	$790,168,282

Expenditures Under Department of Transportation (Code 494)

TRANSPORTATION DETAIL					
Code	Object of Expenditure	FY18	FY19	FY20	FY21
4900	AWARDS & GRANTS - LUMP SUM			$250,000,000	$750,000,000
7700	HIGHWAY AND WATERWAY CONSTRUCT	$25,635,020	$297,523	$271,760	$40,168,282
4400	AWARDS AND GRANTS				$0
	TOTAL	$25,635,020	$297,523	$250,271,760	$790,168,282

Expenditures Under Awards & Grants Lump Sum (Code 4900)

AWARDS & GRANTS - LUMP SUM DETAIL					
Code	Object	FY18	FY19	FY20	FY21
4470	GRANTS TO LOC GOVERNMENTS,NEC			$250,000,000	$750,000,000

Expenditures Under Highway and Waterway Construct (Code 7700)

HIGHWAY AND WATERWAY CONSTRUCT DETAIL					
Code	Object	FY18	FY19	FY20	FY21
7721	CONSTRUCTION/IMPROVEMENT HGHWY	$21,251,901	$169,753	$141,838	$40,168,282
7728	ARCHIT/ENGINEERING FEES-HGHWY	$4,368,709	$127,622	$129,922	
7712	LAND,,APPRAISAL HGHWY	$14,410	$149		
9999	OTHER, N.E.C.	$0	$0	$0	$0
	TOTAL	$25,635,020	$297,523	$271,760	$40,168,282

TRANSPORTATION BOND, SERIES B EXPENDITURES

Expenditures by State Agency

TRANSPORTATION BOND, SERIES B					
Code	Agency	FY18	FY19	FY20	FY21
494	TRANSPORTATION	$224,442,390	$143,542,945	$110,956,742	$54,040,052
799	STATUTORY TRANSFERS	$0	$0	$315,000	$0
	TOTAL	$224,442,390	$143,542,945	$111,271,742	$54,040,052

Expenditures Under Department of Transportation (Code 494)

TRANSPORTATION DETAIL					
Code	Object of Expenditure	FY18	FY19	FY20	FY21
4900	AWARDS & GRANTS - LUMP SUM	$211,212,016	$132,061,911	$105,062,334	$47,673,234
7900	HGHWY/WTRWY CONSTRUC-LUMP SUM	$9,234,900	$8,086,905	$3,162,176	$4,327,131
7700	HIGHWAY AND WATERWAY CONSTRUCT	$3,534,447	$2,420,773	$2,631,813	$1,986,509
4472	TRANSPORTATION GRANTS	$461,027	$973,355	$100,419	$53,179
	TOTAL	$224,442,390	$143,542,945	$110,956,742	$54,040,052

Expenditures Under Awards & Grants Lump Sum (Code 4900)

AWARDS & GRANTS - LUMP SUM DETAIL					
Code	Object	FY18	FY19	FY20	FY21
4472	TRANSPORTATION GRANTS	$201,277,156	$127,463,288	$62,128,686	$27,931,491
1522	OTHER MOTOR VEHICLES			$5,790,846	$10,872,458
7743	ARCHIT/ENGINR/PROF SERV-RR	$2,177,989	$983,022	$5,377,415	$4,738,801
7741	CONSTRUCT/IMPROVEMENT RAILROAD	$6,673,950	$1,161,312	$27,425,610	$2,578,938
7735	REPAIR & MAINTENACE-AERONAUTIC	$487,268	$1,811,350	$3,557,651	$1,189,549
7734	CONSTRCTION/IMPROVE AERONAUTIC	$574,417	$376,591	$782,124	$224,082
7728	ARCHIT/ENGINEERING FEES-HGHWY		$261,585		$137,916
1993	INTERFUND CASH TRANSFERS	$20,954	$4,764		
1991	INTEREST-PROMPT PAYMENT CY	$282			
9999	OTHER, N.E.C.	$0	$0	$0	$0
	TOTAL	$211,212,016	$132,061,911	$105,062,334	$47,673,234

Expenditures Under Hghwy/Wtrwy Construct Lump Sum (Code 7900)

HGHWY/WTRWY CONSTRUC-LUMP SUM DETAIL					
Code	Object	FY18	FY19	FY20	FY21
7741	CONSTRUCT/IMPROVEMENT RAILROAD	$1,712,766	$4,753,725	$772,469	$3,646,686
7743	ARCHIT/ENGINR/PROF SERV-RR	$2,258,177	$2,759,654	$1,932,119	$595,306
7728	ARCHIT/ENGINEERING FEES-HGHWY	$1,513,796	$407,535	$177,766	$85,139
7721	CONSTRUCTION/IMPROVEMENT HGHWY	$3,557,409	$153,182	$236,706	
7712	LAND,,APPRAISAL HGHWY	$39,376	$3,091	$40,242	
7711	LAND/RIGHTS OF WAY HIGHWAY	$128,863			
7710	ATTORNEY FEES	$24,512	$9,718	$2,874	
9999	OTHER, N.E.C.	$0	$0	$0	$0
	TOTAL	$9,234,900	$8,086,905	$3,162,176	$4,327,131

Expenditures Under Highway and Waterway Construct (Code 7700)

HIGHWAY AND WATERWAY CONSTRUCT DETAIL					
Code	Object	FY18	FY19	FY20	FY21
7732	LAND,APPRAISAL AERONAUTIC	$1,928,483	$2,356,803	$2,631,757	$1,986,509
7733	LAND RELOCATE COSTS-AERONAUTIC	$211,241	$58,970		
7731	LAND/RIGHTS OF WAY AERONAUTICS	$1,325,000			
7710	ATTORNEY FEES	$69,723	$5,000		
1991	INTEREST-PROMPT PAYMENT CY			$56	
9999	OTHER, N.E.C.	$0	$0	$0	$0
	TOTAL	$3,534,447	$2,420,773	$2,631,813	$1,986,509

Expenditures Under Transportation Grants (Code 4472)

TRANSPORTATION GRANTS DETAIL					
Code	Object	FY18	FY19	FY20	FY21
4472	TRANSPORTATION GRANTS	$461,027	$973,355	$100,419	$53,179
9999	OTHER, N.E.C.	$0	$0	$0	$0
	TOTAL	$461,027	$973,355	$100,419	$53,179

TRANSPORTATION BOND, SERIES D EXPENDITURES

Expenditures by State Agency

TRANSPORTATION BOND, SERIES D					
Code	Agency	FY18	FY19	FY20	FY21
494	TRANSPORTATION	$38,907,213	$153,683,649	$171,593,609	$139,863,459
528	COURT OF CLAIMS			$377,962	
	TOTAL	$38,907,213	$153,683,649	$171,971,571	$139,863,459

Expenditures Under Dept. of Transportation (Code 494)

TRANSPORTATION DETAIL					
Code	Object of Expenditure	FY18	FY19	FY20	FY21
7700	HIGHWAY AND WATERWAY CONSTRUCT	$38,907,213	$153,683,649	$171,593,609	$139,863,459

Expenditures Under Highway and Waterway Construct (Code 7700)

HIGHWAY AND WATERWAY CONSTRUCT DETAIL					
Code	Object	FY18	FY19	FY20	FY21
7721	CONSTRUCTION/IMPROVEMENT HGHWY	$16,565,860	$137,527,960	$155,245,815	$133,323,708
7728	ARCHIT/ENGINEERING FEES-HGHWY	$18,246,891	$14,496,536	$10,030,277	$5,669,507
7711	LAND/RIGHTS OF WAY HIGHWAY	$2,534,351	$668,914	$1,039,428	$475,666
7725	REPAIR AND MAINTENANCE-HGHWY	$8,619	$570,289	$5,089,342	$236,629
7712	LAND,,APPRAISAL HGHWY	$301,279	$79,010	$46,170	$116,830
7713	LAND RELOCATION COSTS-HGHWY	$3,591			
7710	ATTORNEY FEES	$1,245,608	$330,940	$142,461	$40,848
1991	INTEREST-PROMPT PAYMENT CY	$1,014	$10,000	$116	$271
9999	OTHER, N.E.C.	$0	$0	$0	$0
	TOTAL	$38,907,213	$153,683,649	$171,593,609	$139,863,459

MULTIMODAL TRANSPORTATION BOND FUND EXPENDITURES

Expenditures by State Agency

MULTIMODAL TRANSPORTATION BOND FUND					
Code	Agency	FY18	FY19	FY20	FY21
494	TRANSPORTATION				$42,887,712

Expenditures Under Dept. of Transportation (Code 494)

TRANSPORTATION DETAIL					
Code	Object of Expenditure	FY18	FY19	FY20	FY21
7900	HGHWY/WTRWY CONSTRUC-LUMP SUM				$26,299,379
4900	AWARDS & GRANTS - LUMP SUM				$16,588,333
4400	AWARDS AND GRANTS				$0
7700	HIGHWAY AND WATERWAY CONSTRUCT				$0
	TOTAL				$42,887,712

Expenditures Under Hghwy/Wtrwy Construc-Lump Sum (Code 7900)

HIGHWAY AND WATERWAY CONSTRUCT DETAIL					
Code	Object	FY18	FY19	FY20	FY21
7741	CONSTRUCT/IMPROVEMENT RAILROAD				$10,691,996
7711	LAND/RIGHTS OF WAY HIGHWAY				$9,377,664
7743	ARCHIT/ENGINR/PROF SERV-RR				$4,246,562
7728	ARCHIT/ENGINEERING FEES-HGHWY				$1,983,158
9999	OTHER, N.E.C.				$0
	TOTAL				$26,299,379

Expenditures Under Awards & Grants Lump Sum (Code 4900)

AWARDS & GRANTS - LUMP SUM DETAIL					
Code	Object	FY18	FY19	FY20	FY21
4472	TRANSPORTATION GRANTS				$16,588,333

The Impact of Electric Vehicles and Increased Fuel Efficiency on Transportation Funding

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EXECUTIVE SUMMARY

Transportation is undergoing a fundamental shift, with electric vehicles (EVs) and increasingly fuel-efficient vehicles becoming more common. While this change offers benefits to individuals, businesses, and communities, through reduced emissions and decreased dependency on oil, it will also impact Illinois' transportation revenues. The following report by the Illinois Economic Policy Institute examines the expected impact on state and federal transportation funding.

The use of both electric and hybrid vehicles has grown considerably within the last five years.

- EV registrations have increased from 8,200 in 2017 to 49,000 in 2022, growth of 497%.
- Hybrid electric vehicle registrations have increased from 181,000 in 2017 to over 270,000 in 2022, growth of 49%.

EV growth is expected to accelerate as new state and federal policies are adopted.

- Illinois' Climate and Equitable Jobs Act (CEJA) expressly supports electric transportation and aims to have one million battery-powered vehicles on the road by 2030.
- Rebuild Illinois included $70 million for electrification infrastructure project grants.
- The Reimagining Electric Vehicles in Illinois Act offers incentives to expand in or relocate to Illinois for companies that manufacture EVs, EV parts, and EV charging stations.
- The federal Infrastructure Investment and Jobs Act includes $18 billion for EV investments; Illinois is expected to receive $149 million over 5 years and is eligible for other grant programs.
- Federal Corporate Average Fuel Economy (CAFE) standards were increased in March 2022, increasing the fleetwide average by 10 mpg for model year 2026 compared to 2021.

Illinois' current transportation funding methods are directly tied to the use of motor fuel.

- The motor fuel tax (MFT) is the most important source of funding, with MFT revenues making up 52% of Illinois state transportation funding and 82% of the federal highway trust fund.
- The MFT was designed to charge a user fee commensurate with a person's driving habits; because it is a tax per gallon, revenues have fallen as vehicles have become more fuel-efficient.
- Between 2011 and 2019, Illinois vehicle miles traveled increased by 4%, yet MFT revenue only increased by 3%, indicating the impact increased fuel efficiency played on revenue.

State transportation revenue will be negatively impacted as the state aims to have one million EVs by 2030 and fuel efficiency continues to increase.

- Between 2021 and 2030, it is estimated that Illinois will lose $765 million from transitioning to EVs over traditional vehicles. The combined loss of state and federal revenue is $1.1 billion.
- Between 2021 and 2030, it is estimated that Illinois will lose $3.3 billion from increased fuel efficiency of light-duty vehicles, taking into account increased EV and hybrid use. The combined loss of state and federal revenue is $4.3 billion.

Policy adjustments will be required to minimize the negative impact on transportation revenues.

- A vehicle miles traveled (VMT) fee uses a predetermined fee levied at a per-mile basis for every mile traveled, serving as a more equitable replacement of the motor fuel tax.
- Illinois can consider increasing the existing EV registration fee and adding a hybrid vehicle registration fee; within the Midwest, six other states currently have hybrid vehicle fees.
- A kilowatt-per-hour fee is a user fee directly applied to EVs; while these fees are already used on some chargers and there is a new statewide policy in Iowa, it is difficult to fully capture a person's use of the transportation system as fees are only applied to public charging.

INTRODUCTION

Transportation is undergoing a fundamental shift, with electric vehicles (EVs) and increasingly fuel-efficient vehicles becoming more common. While this change offers benefits to individuals, businesses, and communities, through reduced emissions and decreased dependency on oil, it will also impact Illinois' transportation revenues. Ultimately, a shift to EVs will wipe out the most significant form of transportation funding unless new actions are taken.

The following report by the Illinois Economic Policy Institute examines the expected effect on state and federal transportation funding, particularly as it relates to recent policies implemented in Illinois. Additionally, the report will provide the context of both state and national policies impacting this shift in transportation and a background on the sources of existing transportation funding and related fees. Finally, various options are presented that could remedy looming transportation funding issues.

ELECTRIC AND HYBRID VEHICLES IN ILLINOS

Electric and hybrid electric vehicles are both designed to reduce fuel consumption. An electric vehicle is defined in Illinois state statute as a vehicle that is exclusively powered by and refueled by electricity, must be plugged in to charge, and is licensed to drive on public roadways (20 ILCS 627). As such, it uses no gasoline.

While hybrid electric vehicles (HEVs) all strive to reduce gasoline consumption, their impact is dependent on the exact type of HEV. A standard HEV combines a conventional motor with some form of onboard electric propulsion. Because the internal combustion engine is still the main power source and the electric motor is a complement, these HEVs provide relatively smaller amounts of fuel consumption savings. Alternatively, a plug-in HEV (PHEV) combines two compulsion modes, and the gas-powered engine serves as a back-up once the battery power is drained. As such, PHEVs are considered to provide greater fuel consumption savings (Xu et al., 2020). Unfortunately, since it is unknown which type of hybrid vehicles are used in Illinois, hybrids are not considered in this analysis. Fuel consumption may vary widely, making any analysis estimating fuel savings likely to be inaccurate.

Figure 1: Electric, Hybrid, and Total Vehicle Registrations in Illinois, 2017-2021

Year	Electric Vehicle Registrations	Annual Growth From Previous Year	Hybrid Vehicle Registrations	Annual Growth From Previous Year	Total Vehicle Registrations	EVs as %
2017	8,255	-	181,399	-	11,658,429	0.07%
2018	12,713	54%	194,478	7%	11,704,038	0.11%
2019	18,769	48%	208,002	7%	11,322,497	0.17%
2020	25,319	35%	221,205	6%	10,794,020	0.23%
2021	36,482	44%	251,266	14%	11,179,214	0.33%

Source: ILSOS, 2022

The use of both electric and hybrid vehicles has grown considerably within the last five years (Figure 1). Electric vehicle registrations have increased from 8,200 in 2017 to 36,000 in 2021, growth of 342%. Year-over-year annual growth has ranged between 35% and 54%. As of August 2022, EV registrations grew another 34% totaling over 49,000. HEV (both standard HEV and PHEV) are also growing in popularity, increasing from 181,000 registrations in 2017 to over 251,000 in 2020, growth of 39%. Year-

over-year growth was smaller, at 7% for 2018 through 2019. However, an annual growth of 14% occurred between 2020 and 2021. As of August 2022, HEV registrations totaled 270,700, an increase of 8% from the previous year.

STATE AND FEDERAL POLICIES

While it's clear that the use of EVs across Illinois has grown, this trend is only expected to accelerate as new policies are adopted. A myriad of state and federal policies have been implemented in recent years to support increased EV use and ownership. The following section summarizes these programs, infrastructure investments, and environmental goals.

Climate & Equitable Jobs Act (CEJA)

Passed in 2021, the Climate and Equitable Jobs Act (CEJA) seeks to tackle climate change, while training a diverse workforce in energy jobs, addressing ethics and transparency reforms, and introducing ratepayer and customer protections. CEJA moves Illinois to 100 percent carbon-free power by 2045, with interim targets of 40 percent by 2030 and 50 percent by 2040. A variety of programs were introduced to aid in reaching these goals, while addressing workforce needs, accountability, and cost-savings.

In terms of transportation, CEJA expressly supports electric transportation, aiming to have one million battery-powered cars and trucks on the road by 2030. To support this goal, rebates for up to $4,000 were created for customers who buy electric vehicles. Additionally, the Illinois Environmental Protection Agency (IEPA) is required to award rebates to help fund up to 80% of the cost of the installation of charging stations and creates an Electric Vehicle Coordinator within IEPA. It also includes incentives for public transit, school buses, and city-owned vehicles to electrify (State of Illinois, 2021; CUB, 2021).

Reimagining Electric Vehicles in Illinois Act

Incentivizing EV production statewide, the Reimagining Electric Vehicles in Illinois Act (REV Act) was signed into law in 2021. This legislation intends to make Illinois a hub for EV and auto battery production. It offers incentives to expand in or relocate to Illinois for companies that manufacture EVs and EV parts, as well as EV charging stations. The REV Act includes tax credits for income tax withholding, training costs, tax exemptions, and investment credits. Additionally, employers are incentivized to locate new facilities in communities that have been historically left out of investment and the law also requires vendor diversity reporting, diverse hiring plans, and workforce diversity reporting (State of Illinois, 2021; DCEO, 2022).

Rebuild Illinois Capital Plan & Volkswagen Settlement Funds Program

Signed into law in June 2019, Rebuild Illinois is a $45 billion capital bill for the State of Illinois providing transportation, education, state facilities, and other infrastructure investments over a six-year period. Within the environmental category, the state dedicated $70 million to the Illinois Environmental Protection Agency for grants related to transportation electrification infrastructure projects. The money is intended to provide grants to low-income communities for EV charging infrastructure and aid in electrifying public transit and school buses across the state (State of Illinois, 2019).

While it is not evident that the Illinois EPA has released this funding yet, similar projects have been funded under the Driving a Cleaner Illinois Program through the Volkswagen settlement funds. Updated guidance was released in April 2021 in which it was proposed that all remaining funding under the VW funds are to support all-electric transit and school buses and light-duty electric charging infrastructure (IEPA, 2021). Most recently, $4.2 million in grants were announced to provide 17 electric school buses in the Chicago area and Metro-East (IEPA, 2022).

Federal Infrastructure Investment and Jobs Act (IIJA)

The federal infrastructure law – the Infrastructure Investment and Jobs Act (IIJA) – includes $18 billion for investment in electric vehicle charging, investments for school buses, transit buses, and passenger ferries to transition to electric vehicles, and other electric vehicle programs. Of that, $5 billion is dedicated to a new formula program for states to install electric vehicle charging infrastructure and establish an interconnected network to facilitate data collection, access, and reliability. Illinois is expected to receive $149 million over five years. The remaining funding will be eligible to Illinois through competitive grants under various programs for school buses, corridor charging infrastructure, and transit buses (The White House, 2022; ILEPI, 2022).

Federal Inflation Reduction Act

Passed in August 2022, the Inflation Reduction Act included tax credits for both new and used EVs and plug-in hybrids. The law extends the $7,500 tax credit for new EVs that qualify and includes the addition of $4,000 tax credit for used EVs that meet certain qualifications. New qualifications that were added included an income cap for those applying, assembly of vehicle in North America, battery component requirements, vehicle price cap, and others. Partial credits may also be available under certain circumstances. The Biden Administration expressed the goal of incentivizing manufacturers to cater to less-affluent customers, thus making EVs within reach for a larger portion of the population (IRS, 2022; Rezvani, 2022).

Federal Corporate Average Fuel Economy (CAFE) Standards

The National Highway Traffic Safety Administration (NHTSA) sets the Corporate Average Fuel Economy (CAFE) standards, which regulate how far vehicles must travel on a gallon of fuel. These standards are set for both passenger cars and light-duty trucks and medium- and heavy-duty trucks and engines.

In March 2022, the NHTSA announced new CAFE standards requiring an industry-wide fleet average of 29 miles per gallon (mpg) for passenger cars and light trucks in model year 2026. As a result, fuel efficiency will increase 8% annually for model years 2024-2025 and 10% annually for model year 2026. The fleetwide average will increase by nearly 10 miles per gallon for model year 2026, as compared to model year 2021.

The new CAFE standards are estimated to reduce fuel consumption by more than 200 billion gallons through 2050, compared to the former standards. As a result, a person purchasing a new vehicle in 2025 will get 33% more miles per gallon as compared to 2021 (NHTSA, 2022).

CURRENT TRANSPORTATION FUNDING

Illinois' transportation funding is directly tied to motor fuel sales. As Illinois and the federal government continue to implement and promote policies to support the expansion of EVs and improved fuel efficiency, Illinois' transportation funding will be impacted. To understand the future of transportation funding in Illinois, it is important to first understand the state's current system for funding transportation.

State Transportation Funding

State transportation funding is generated from a combination of user fees and bonding. The user fees – the motor fuel tax (MFT), vehicle registrations, certificate of title fees, and driver's license fees – contribute to regular, continuous annual funding. These funding sources generated over $5 billion in FY2021, with almost $4.6 billion dedicated to specific transportation funds. The MFT accounts for 52% of total state transportation revenue (Figure 2) in FY21. As such, a decline in revenue due to the increase in vehicle fuel efficiency and EVs will significantly impact the state's ability to support transportation funding.

Figure 2: Illinois State Transportation Revenues by Source, FY21

User Fee	FY21 Revenues	FY21 Revenue Dedicated to Transportation Funds*	% of Total Transportation Revenue
Motor Fuel Tax	$2,381,062,185.94	$2,381,062,185.94	52%
Vehicle Registration Fees	$2,144,218,284.00	$1,909,311,466.39	42%
Certificate of Title Fees	$394,982,223.02	$270,477,280.80	6%
Driver's License Fees	$91,383,084.00	$32,815,201.50	1%
Total	$5,011,645,776.96	$4,593,666,134.63	

* Includes Road Fund, State Construction Account, Motor Fuel Tax Fund, and Transportation Renewal Fund

Sources: Illinois Comptroller, 2021

Federal Transportation Funding

Federal transportation funding is generated from a variety of user fees, including a federal MFT, tire fees, truck and trailer sales tax, and heavy vehicle use fees. These revenues support the federal Highway Trust Fund (HTF), which supports federal surface transportation funding for highway and transit programs that are distributed by formula for states. Of total federal transportation revenues, motor fuel taxes account for 82% of total funding. Consequently, the reduction in MFT revenue will significantly impact federal transportation funding. This has already been felt, with the federal government depending on annual transfers from the general fund since 2008 to support the HTF (CRS, 2021).

Figure 3: Federal Transportation User Fee Revenue for Highway Trust Fund, 2020

Account	Motor Fuels			Other User Fees				Grand Total
	Gasoline	Special Fuels	Total	Tires	Trucks, Buses, and Trailer	Heavy Vehicle Use	Total	
Highways	$21,317	$9,220	$30,537	$507	$4,951	$1,463	$6,921	$38,267
Transit	$3,972	$1,226	$5,198	-	-	-	-	$5,307
Total	$25,289	$10,447	$35,735	$507	$4,951	$1,463	$6,921	$43,574
Percent of Total HTF Revenues	58%	24%	82%	1%	11%	3%	16%	100%

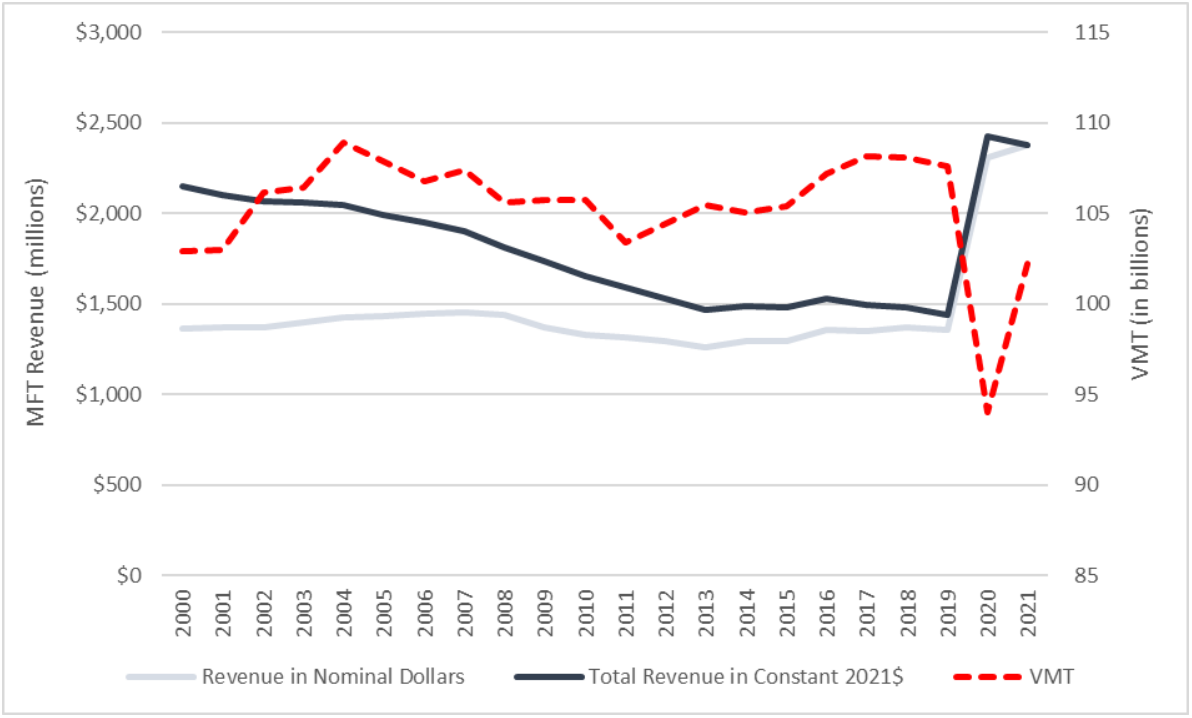
Source: FHWA, 2021a

MFT Revenue Over Time

The MFT was designed to charge a fee commensurate to a person's driving habits. Initially, this worked as planned, with a person who drives more, paying more. However, due to the nature of the tax – being a tax per gallon as opposed to a tax on the cost – revenues have fallen as vehicles have become increasingly fuel-efficient. Additionally, the state did not increase the MFT between 1991 and 2019, leading to inflation taking a toll on real MFT revenues.

Figure 4 summarizes MFT revenue, in both nominal and inflation-adjusted dollars (constant 2021 dollars), compared to annual vehicles miles traveled (VMT) in the state. First, it is clear that inflation had a large impact, as inflation-adjusted MFT revenues steadily declined between 2000 and 2019. Additionally, MFT revenues not adjusted to inflation remained fairly constant between 2000 and 2019, despite a growth in VMT. Specifically, between 2011 and 2019, VMT increased by 4%, yet MFT revenue only increased by 3%. This indicates the impact that increased fuel efficiency played on revenue. The MFT was increased in 2019 and indexed to inflation, which addresses some of these issues. However, increased fuel efficiency and more EVs will continue to impact revenue for years to come as drivers purchase fewer gallons of fuel.

Figure 4: Illinois Motor Fuel Tax (MFT) Revenue in Nominal and Constant 2021$ Compared to Illinois Annual Vehicle Miles Traveled (VMT)



Source: IDOR, 2021 (MFT revenue); IDOT, 2021 (VMT)

Current EV Fees

In an attempt to address the revenue shortfalls from EVs, additional state registration fees on EVs were adopted following the passage of Rebuild Illinois. Beginning in 2020, owners of EVs pay an additional $100 in registration fees annually. While this generates additional revenue, it does not cover the total revenue lost from the EV owner not contributing to the MFT. An average driver travels 11,520 miles

annually (FHWA, 2020). With the average fuel efficiency for light-duty vehicles in 2021 at 24.2 miles per gallon, we can calculate that an average driver uses 476 gallons per year (EIA, 2022). Multiplying this by the current state MFT of $0.392 per gallon means that the average driver should be contributing $187 to transportation revenues from motor fuel taxes. As such, the average EV driver is shorting transportation funds by $87 every year.

FISCAL IMPACTS

As the state continues to see a larger proportion of EVs and increased fuel efficiency in standard vehicles, transportation revenues will feel the impact. The following section estimates the fiscal impact over the 10-year period between 2021 and 2030. Specifically, it estimates the impact if Illinois reaches one million registered EVs by 2030 – a goal of CEJA – and the impact of overall increased fuel efficiency of light-duty vehicles.

Fiscal Impact of Reaching 1 million EVs by 2030

Figure 5 calculates the fiscal impact on state and federal transportation revenues of reaching one million EVs by 2030. First, registered EVs and the average fuel efficiency for light-duty vehicles are used to calculate the number of gallons of fuel that will not be purchased by an EV that would have otherwise been purchased by using a standard vehicle. Illinois had 36,400 registered EVs in 2021 and almost 49,000 as of August 2022. To reach one million EVs by 2030, the state would have to add 119,000 EVs every year, which is assumed in this analysis. The average fuel efficiency is determined by the U.S. Energy Information Administration under the 2022 Annual Energy Outlook Reference Case, which reports estimated future fuel efficiency. Average miles driven is assumed to be 11,520 per vehicle, which is the current national average (FHWA, 2021b).

The number of gallons no longer purchased by EVs is then multiplied by the respective state MFT, state sales tax on motor fuels, and federal MFT rates. The state MFT is assumed to increase by 2.9 cents in 2023 and 1.5% annual growth for every year after. The state sales tax on motor fuels is a per gallon rate calculated every six months depending on the average price of fuel. Since the price of fuel is unknown for future years, the average sales tax on motor fuel rates from the past 12 years was used for this analysis. The state revenue lost from the adoption of EVs is also offset from the $100 annual fee paid by EV owners.

Between 2021 and 2030, it is estimated that the state will lose $765 million from the transition to EVs over traditional gas-powered vehicles. When combined with the federal motor fuel tax, it is estimated that total state and federal transportation revenue lost will be $1.1 billion. It should be noted that this is a conservative estimate as this analysis assumes all EVs will be light-duty vehicles. While the state may ultimately include buses, trucks, or other vehicles in the one million EV count, this analysis assumes all light-duty vehicles (Figure 5).

Figure 5: Estimated Impact of Reaching 1,000,000 EVs (light-duty) by 2030 on Transportation Revenues

		2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
EV Registration & Fuel Data	Registered EVs[1]	36,482	48,917	167,802	286,688	405,573	524,459	643,344	762,229	881,115	1,000,000
	Average fuel efficiency for light-duty vehicles[2]	24.2	24.6	25.0	25.4	25.9	26.3	26.7	27.1	27.7	28.0
	Gallons of fuel no longer purchased[3]	17,366,638	22,907,473	77,323,334	130,025,310	180,393,915	229,724,788	277,577,582	324,017,748	366,441,895	411,428,571
Tax Rates (per gallon)	State gasoline MFT rate[4]	$0.387	$0.392	$0.421	$0.427	$0.434	$0.440	$0.447	$0.454	$0.460	$0.467
	State sales tax on motor fuels rate[5]	$0.160	$0.160	$0.160	$0.160	$0.160	$0.160	$0.160	$0.160	$0.160	$0.160
	Federal gasoline MFT rate	$0.184	$0.184	$0.184	$0.184	$0.184	$0.184	$0.184	$0.184	$0.184	$0.184
Revenue Calculations	Annual state MFT revenue lost	$6,720,889	$8,979,729	$32,553,124	$55,561,765	$78,241,301	$101,131,880	$124,031,117	$146,953,896	$168,687,720	$192,237,823
	Annual state sales tax on motor fuels revenue lost	$2,778,662	$3,665,196	$12,371,734	$20,804,050	$28,863,026	$36,755,966	$44,412,413	$51,842,840	$58,630,703	$65,828,571
	Annual EV fee offset ($100 per vehicle)	$3,648,200	$4,891,700	$16,780,238	$28,668,775	$40,557,313	$52,445,850	$64,334,388	$76,222,925	$88,111,463	$100,000,000
Total Impact on Transportation Revenues	**Total state revenue lost** (MFT and sales tax minus annual EV fee offset)	**$5,851,351**	**$7,753,225**	**$28,144,620**	**$47,697,040**	**$66,547,015**	**$85,441,996**	**$104,109,142**	**$122,573,811**	**$139,206,961**	**$158,066,394**
	Annual Federal MFT revenue lost	**$3,195,461**	**$4,214,975**	**$14,227,494**	**$23,924,657**	**$33,192,480**	**$42,269,361**	**$51,074,275**	**$59,619,266**	**$67,425,309**	**$75,702,857**
	TOTAL REVENUE LOST	**$9,046,812**	**$11,968,200**	**$42,372,113**	**$71,621,697**	**$99,739,495**	**$127,711,357**	**$155,183,417**	**$182,193,077**	**$206,632,270**	**$233,769,251**
	10-Year STATE revenue lost	$765,391,556									
	10-Year TOTAL (state + federal) revenue lost	$1,140,237,691									

[1] 2021 and 2022 reflect actual registration numbers; later years assume annual growth of 120,000 vehicles to reach 1 million by 2030

[2] Fuel efficiency projections calculated by the U.S. Energy Information Administration

[3] Calculated based on average of 11,520 miles driven annually per vehicle and annual fuel efficiency projections for 2021-2030 by the U.S. Energy Information Agency

[4] Assuming 2.9 cent increase between 2022 and 2023 and 1.5% annual growth for every year after

[5] Rate varies based on fuel prices; using average rate over past 12 years at $0.16 per gallon

Sources: ILSOS, 2022 (EV registrations); EIA, 2022 (fuel efficiency); FHWA, 2021b (miles driven); IDOR, 2022 (MFT rates)

Figure 6: Estimated Impact of Improved Light-Duty Vehicle Fuel Efficiency (taking into account EVs) by 2030 on Transportation Revenues

		2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Travel Data	Illinois VMT for light-duty vehicles[1] (in millions)	89,454	94,942	99,281	102,678	104,305	105,767	107,022	107,987	108,746	109,475
	Average fuel efficiency for light-duty vehicles[2]	24.2	24.6	25.0	25.4	25.9	26.3	26.7	27.1	27.7	28.0
Fuel Efficiency Impact on Gallons	Gallons purchased at improved fuel efficiency[3]	3,696,446,281	3,859,426,671	3,971,227,048	4,042,445,612	4,027,234,885	4,021,557,460	4,008,308,418	3,984,764,677	3,925,831,420	3,909,825,368
	Gallons purchased at flat 22.9 mpg[4]	3,906,288,210	4,145,934,328	4,335,400,708	4,483,760,635	4,554,820,241	4,618,644,594	4,673,442,565	4,715,594,879	4,748,713,115	4,780,572,503
	Gallons no longer purchased due to improved fuel efficiency	209,841,929	286,507,657	364,173,659	441,315,023	527,585,356	597,087,134	665,134,148	730,830,203	822,881,695	870,747,134
Tax Rates (per gallon)	State gasoline MFT rate[5]	$0.387	$0.392	$0.421	$0.427	$0.434	$0.440	$0.447	$0.454	$0.460	$0.467
	State sales tax on motor fuels rate[6]	$0.160	$0.160	$0.160	$0.160	$0.160	$0.160	$0.160	$0.160	$0.160	$0.160
	Federal gasoline MFT rate	$0.184	$0.184	$0.184	$0.184	$0.184	$0.184	$0.184	$0.184	$0.184	$0.184
Revenue Calculations	Annual state MFT revenue lost	$81,208,826	$112,311,001	$153,317,111	$188,580,529	$228,826,814	$262,856,025	$297,204,588	$331,458,220	$378,805,042	$406,851,991
	Annual state sales tax on motor fuels revenue lost	$33,574,709	$45,841,225	$58,267,786	$70,610,404	$84,413,657	$95,533,941	$106,421,464	$116,932,832	$131,661,071	$139,319,542
	Annual federal MFT revenue lost	$38,610,915	$52,717,409	$67,007,953	$81,201,964	$97,075,706	$109,864,033	$122,384,683	$134,472,757	$151,410,232	$160,217,473
Total Impact on Transportation Revenues	**Total state revenue lost** (MFT and sales tax)	**$114,783,535**	**$158,152,227**	**$211,584,896**	**$259,190,933**	**$313,240,470**	**$358,389,966**	**$403,626,052**	**$448,391,053**	**$510,466,113**	**$546,171,532**
	Annual Federal MFT revenue lost	**$38,610,915**	**$52,717,409**	**$67,007,953**	**$81,201,964**	**$97,075,706**	**$109,864,033**	**$122,384,683**	**$134,472,757**	**$151,410,232**	**$160,217,473**
	TOTAL REVENUE LOST	**$153,394,450**	**$210,869,635**	**$278,592,849**	**$340,392,897**	**$410,316,176**	**$468,253,999**	**$526,010,735**	**$582,863,810**	**$661,876,345**	**$706,389,005**
	10-Year STATE revenue lost	$3,323,996,777									
	10-Year TOTAL (state + federal) revenue lost	$4,338,959,902									

[1] 2021 is actual number reported by IDOT and 2022-2030 are U.S. projections calculated by the U.S. Energy Information Administration multiplied by 3.4% to represent Illinois' share of the nation's VMT
[2] Fuel efficiency projections calculated by the U.S. Energy Information Administration; these projects include an assumed increase in EVs
[3] Calculated based annual fuel efficiency projections for 2021-2030 by the U.S. Energy Information Agency
[4] 22.9 mpg is the most recently reported national fuel economy for light-duty vehicles in 2020
[5] Assuming 2.9 cent increase between 2022 and 2023 and 1.5% annual growth for every year after
[6] Rate varies based on fuel prices; using average rate over past 12 years at $0.16 per gallon

Sources: IDOT, 2021 (2021 VMT); EIA, 2022 (VMT and fuel efficiency); FHWA, 2010-2019 (IL VMT %); IDOR, 2022 (MFT rates)

Fiscal Impact of Increased Fuel Efficiency for Light-Duty Vehicles

While EVs pose a threat to state and federal transportation funding, overall increased fuel efficiency will have a larger impact. Figure 6 calculates the fiscal impact of increased fuel efficiency for light-duty vehicles. It is important to note that this analysis assumes a level of EV adoption in the fuel efficiency numbers, thus these figures should not be combined with those calculated in the previous section and Figure 5.

First, vehicle miles traveled for Illinois light-duty vehicles was estimated for 2022 through 2030. While 2021 is the actual figure reported by IDOT, the remaining VMT numbers were calculated using U.S. Energy Information Agency projections for the United States multiplied by 3.4%, which is the average of Illinois' share of the national total VMT over the past 10 years (FHWA, 2010-2019).

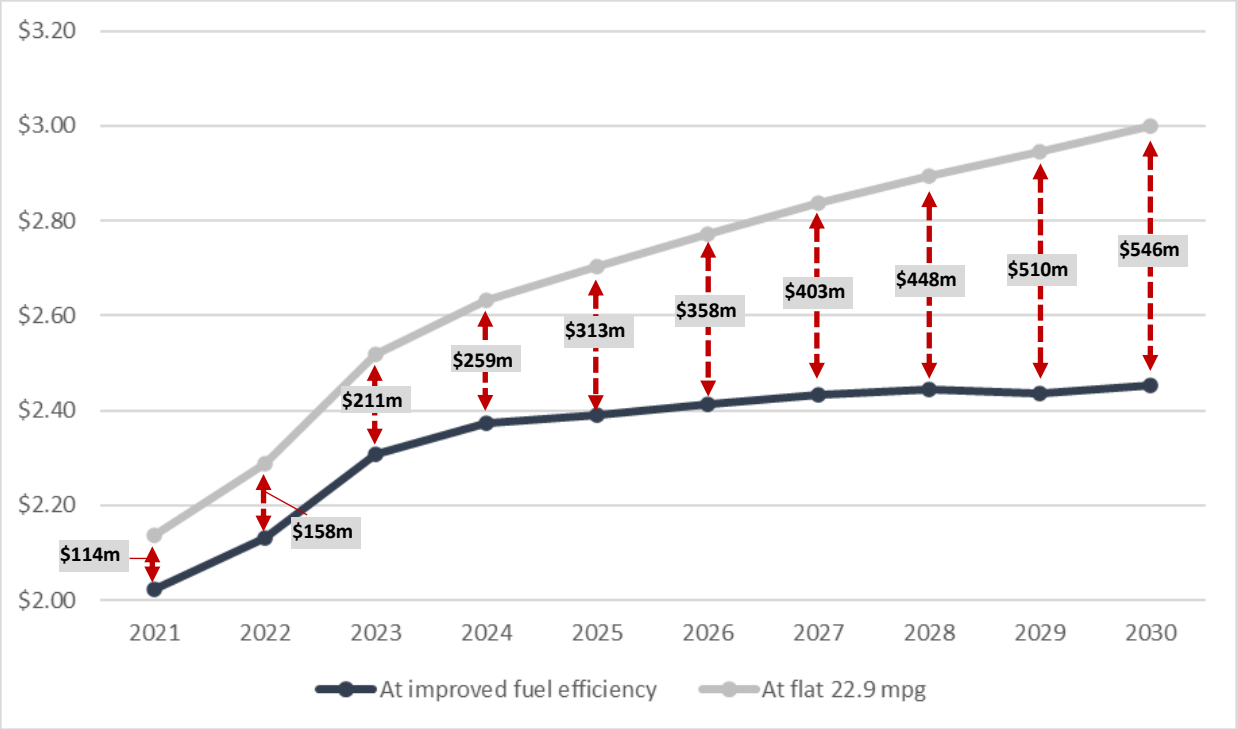
Similar to the previous analysis, the number of gallons purchased under increased fuel efficiency is then calculated using the U.S. Energy Information Administration's estimated future fuel efficiency values under the 2022 Annual Energy Outlook Reference Case, which take into account increased use of EVs over the years. Fuel efficiency of light-duty vehicles is estimated to increase to 28 miles per gallon by the year 2030. These values are compared to gallons purchased at a flat 22.9 miles per gallon, which is the most recently reported fuel efficiency value from 2020 (FHWA, 2021b), to determine the number of gallons no longer purchased due to improved fuel efficiency.

The number of gallons no longer purchased due to improved fuel efficiency is then multiplied by the respective state MFT, state sales tax on motor fuels, and federal MFT rates. The state MFT is assumed to increase by 2.9 cents in 2023 and 1.5% annual growth for every year after. The state sales tax on motor fuels is a per gallon rate calculated every six months depending on the average price of fuel. Since the price of fuel is unknown for future years, the average sales tax on motor fuel rates from the past 12 years was used for this analysis.

Between 2021 and 2030, it is estimated that the state will lose $3.3 billion from overall increased fuel efficiency of light-duty vehicles compared to average fuel-efficiency in 2020. When combined with federal motor fuel tax, it is estimated that total state and federal transportation revenue lost will be $4.3 billion (Figure 6).

Figure 7 illustrates the annual loss in state MFT revenues that will be realized as light-duty vehicles become more fuel efficient. Using the data presented in Figure 6, this graph illustrates the difference in Illinois state MFT revenue when comparing projected increased fuel efficiency to the flat rate of 22.9 mpg, which was the most recently reported national fuel economy for passenger vehicles in 2020. The annual loss will top $500 million beginning in 2029 and reach over $546 million in 2030.

Figure 7: Comparison of State MFT Revenue* from Light-Duty Vehicles under Different Fuel Efficiencies, 2021-2030



* Includes both state MFT revenue and state sales tax on motor fuels revenue
Source: Author's analysis using data from EIA, 2022 and IDOT, 2021 and summarized in Figure 7

Long-term Fiscal Impact

Improved fuel efficiency is expected to greatly increase in the coming years with the expanded adoption of EVs and hybrid vehicles, resulting in lost revenue for crucial transportation infrastructure. While Illinois has already experienced lost transportation revenue for this reason, as vehicle fuel economy has steadily improved since 2000, Rebuild Illinois addressed part of the issue by doubling the MFT rate. Up to this point, Rebuild Illinois funding estimates have been adequately met. However, fuel efficiency will only continue to increase at a faster rate in coming years as new technology is developed and reducing CO_2 emissions becomes a higher priority. As such, the long-term fiscal impact will be substantial, once again making adequate transportation funding a priority for policymakers. Changes must be made to ensure Illinois does not again go more than a decade without an appropriately funded capital plan.

POTENTIAL POLICY CHANGES

To minimize the fiscal impact of these transportation changes, policy adjustments on how transportation is funded will be required. Without change, the state will see decreased funding to support crucial infrastructure investments. The following section explores potential policies that could be implemented in Illinois to address future transportation funding shortfalls.

Vehicles Miles Traveled Fee

A vehicle miles traveled (VMT) fee equitably charges the users of the transportation system based on the actual distance they travel. Serving as a replacement of the existing motor fuel tax, a VMT fee uses a predetermined fee levied at a per-mile basis for every mile traveled on a public roadway and provides a sustainable funding source that parallels usage. This is the most straightforward method to solve revenue shortfalls due to EVs and increased fuel efficiency, as it charges a person based on miles traveled, not the number of gallons of fuel purchased. VMT fee programs have been successfully piloted in numerous states and are currently voluntarily used as an alternative to the MFT in Oregon.

The concept of a VMT fee has been discussed by transportation policymakers and state leaders in Illinois for several years. A bill was formerly proposed in 2016, in which the motor fuel tax would be rolled back and a VMT fee would be implemented in its place (Brasuell, 2016). While the bill ultimately did not succeed, the proposal has remained a viable option recently proposed in IDOT's Long Range Transportation Plan (IDOT, 2018), the Chicago Metropolitan Agency for Planning's ON TO 2050 Comprehensive Regional Plan (CMAP, 2022), and by other public policy organizations, including the Illinois Economic Policy Institute (Craighead, 2018).

While not directly comparable, it is worth noting that Illinois already utilizes a mileage tax for a particular type of truck and trailer registration fee. Advertised as an alternative to standard registration fees, the Mileage Weight Tax Registration is a reduced fee for trucks and trailers that travel a relatively low amount of mileage in a year and strictly travel within Illinois. Different fees are offered depending on the weight of the vehicle and estimated mileage traveled in a year, with the maximum mileage being 7,000 miles. There is then an excess rate, ranging from .031 to .150 per mile, if a vehicle travels above the designated mileage for that year (ILSOS, 2022b).

Increase Existing Fees and Consider Hybrid Fees

As previously noted, Illinois currently has a $100 additional annual registration fee for all EVs. However, this does not adequately cover the MFT revenue that is paid by the average driver of gas-powered vehicle. As such, Illinois can consider increasing the annual EV to at least $187, which would compensate for the average MFT lost.

Additionally, while not extensively covered in this report, hybrid vehicle fees can also be considered. It is difficult to estimate the exact financial impact hybrids have on transportation revenues. As previously discussed, some hybrids still depend on gasoline-powered engines as the main energy source while others primarily depend on electric engines. As such, fuel efficiency of hybrid vehicles varies widely. One researcher reported that hybrid vehicles "only save limited fuel consumption" in an analysis on the impact of electric and hybrid vehicles in Alabama (Xu et al., 2020). However, the North Carolina Department of Transportation reported that an average hybrid vehicle operating within their state has a fuel efficiency that is 17.6 more miles per gallon than the state's average vehicles (NCDOT, 2020). Overall, it can be expected that hybrid vehicles do result in some fuel savings, leading to less MFT revenue.

Currently, 14 states across the United States have separate hybrid vehicle fees. Looking specifically at the Midwest – considering Illinois, Indiana, Iowa, Michigan, Minnesota, Missouri, Ohio, and Wisconsin – all other midwestern states outside of Illinois have an additional EV fee and six of these seven states

have a hybrid vehicle fee. Additionally, four of these seven states have a higher EV fee than Illinois (Figure 8).

Figure 8: Additional Electric and Hybrid Vehicle Fees in Other Midwest States

	Electric Vehicle Fee*	Hybrid Vehicle Fee*
Illinois	**$100**	**-**
Indiana	$150	$50
Iowa	$130	$65 for plug-in hybrids
Michigan	$100 EVs up to 8,000 lbs $200 EVs over 8,000 lbs	$30 certain plug-in hybrids up to 8,000 lbs $100 certain plug-in hybrids over 8,000 lbs
Minnesota	$75	-
Missouri	$75	$37.50 for plug-in hybrids
Ohio	$200	$100
Wisconsin	$100	$75
* Additional fee in addition to standard vehicle registration fees		

Source: NCSL, 2021

Kilowatt-Per-Hour Fee

Alternatively, a kilowatt-per-hour fee is another user fee directly applied to EVs. This fee charges based on the electricity used to charge EVs and plug-in hybrid vehicles. This fee is most similar to an MFT, as it charges based on use and is collected incrementally. However, implementation may be complicated in determining where EVs are being charged and the appropriate tax rate.

Kilowatt-per-hour fees have already been implemented on a limited number of local EV charging stations across Illinois. There are 30 Tesla chargers located in a variety of cities, including Chicago, Bolingbrook, Champaign, Cherry Valley, Effingham, Skokie, Springfield, Aurora, Peoria, Peru, and others, that charge $0.28 per kilowatt-hour. There are an additional 35 Blink chargers also located in a variety of cities, including Chicago, Quincy, Wheaton, Champaign, Harvard, LaSalle, and others, that charge $0.49 per kilowatt-hour. While these chargers are operating with fees, the funding is not used to support state transportation funding (DOE, 2022a).

An example of a statewide policy, Iowa recently adopted an Alternative Fuel Tax, in which electricity is subject to the excise tax of $0.026 kilowatt-hour of fuel delivered into a battery or other energy storage device of an EV. It applies to any location in Iowa other than a residence (DOE, 2022b).

While electric charging station fees are not wholly uncommon, they are not often used to support or make-up for lost transportation funding. The Iowa policy strives to support transportation funding, yet is limited in its effectiveness, as many people may choose to charge their vehicle at home for free. Consequently, additional work would be required to develop a policy that can entirely work to replace lost MFT revenue through a kilowatt-per-hour fee.

CONCLUSION

Transportation is undergoing a fundamental shift. It is expected that the use of EVs and more fuel-efficient vehicles will continue to grow and new challenges will be presented as new technologies become available. As a result, it is imperative that state and federal governments seriously consider how transportation is funded and how these changes will impact existing funding mechanisms. Without

policy adjustments, infrastructure loses viable funding sources and crucial roads, bridges, and transit systems will not be properly maintained to provide a safe and efficient transportation system.

Illinois stands to lose $3.3 billion in state transportation revenue alone over a 10-year period due to improved vehicle fuel efficiency, including an increased adoption of EVs and hybrid vehicles. This is funding the state does not have to lose. Even with the passage of Rebuild Illinois, Illinois is playing catch-up to address all backlogged maintenance needs accrued due to a lack of funding over previous decades.

EVs and improved vehicle fuel efficiency are both great advancements that lead to many benefits for the state. However, an unintended consequence of these policies is the detrimental impact on transportation funding. This is an issue that can be addressed to minimize impacts if policymakers make it a priority now. It is time for Illinois to stop playing catch-up and proactively address transportation funding to ensure sustainable, continuous funding for decades to come.

REFERENCES

Brasuell, James. (2016). "Illinois Considering a Vehicles Miles Traveled Tax." *Planetizen.*

Chicago Metropolitan Agency for Planning (CMAP). (2022). *ON TO 2050 Comprehensive Regional Plan*.

Craighead, Mary. (2018). *Forecasting Bumpy Roads Ahead: An Assessment of Illinois' Transportation Needs*. Illinois Economic Policy Institute.

Citizens Utility Board (CUB). (2021). *What is the Climate and Equitable Jobs Act?*

Congressional Research Service (CRS). (2021). *Highway and Public Transit Funding Issues*.

Federal Highway Administration (FHWA). (2021a). *Highway Statistics Series: Table FE-210*.

Federal Highway Administration (FHWA). (2021b). *Highway Statistics Series: Table VM-1*.

Federal Highway Administration (FHWA). (2010-2019). *Highway Statistics Series: Table VM-2.*

Illinois Comptroller. (2021). *State Revenue by Revenue Source*.

Illinois Department of Commerce and Economic Opportunity (DCEO). (2022). *Reimagining Electric Vehicles (REV) Illinois Program*.

Illinois Department of Revenue (IDOR). (2021). *Annual Reports*.

Illinois Department of Revenue (IDOR). (2022). *Prepaid Sales Tax Rates*.

Illinois Department of Transportation (IDOT). (2018). *Long Range Transportation Plan*.

Illinois Department of Transportation (IDOT). (2021). *2021 Illinois Travel Statistics*.

Illinois Economic Policy Institute (ILEPI). (2022). *Infrastructure Investment and Jos Act: Transportation Funding Summary for Illinois.*

Illinois Environmental Protection Agency (IEPA). (2021). *Pritzker Administration Announces Revised, Electric Volkswagen Settlement Funding Plan and $9 Million Grant Opportunity for Electric School Buses.*

Illinois Environmental Protection Agency (IEPA). (2022). *Pritzker Administration Awards Over $4.2 Million in Grants Providing 17 Electric School Buses in Chicagoland and Metro-East*.

Illinois Secretary of State (ILSOS). (2022). *Vehicle Services Statistics*.

Internal Revenue Service (IRS). (2022). *Frequently Asked Questions on the Inflation Reduction Act's Initial Changes to the Electric Vehicle Tax Credit*.

National Conference of State Legislators (NCSL). (2021). *Special Fees on Plug-In Hybrid and Electric Vehicles*.

National Highway Traffic Safety Administration (NHTSA). (2022). *Corporate Average Fuel Economy*.

North Caroline Department of Transportation (NCDOT). (2020). *Revenue Impact from Electric and Hybrid Vehicles.*

Rezvani, Arezou. (2022). "You can get $7,500 tax credit to buy an electric car, but it's really complicated." *NPR.*

Secretary of State (ILSOS). (2022b). *Mileage Weight Tax Reporting*.

State of Illinois. (2019). *Rebuild Illinois Summary*.

State of Illinois. (2021). *Gov. Pritzker Signs Transformative Legislation Establishing Illinois as a National Leader on Climate Action.*

State of Illinois. (2021b). *Governor Pritzker Signs the Reimagining Electric Vehicles in Illinois Act.*

The White House. (2022). *Building a Better America: A Guidebook to the Bipartisan Infrastructure Law for State, Local, Tribal, and Territorial Governments, and other Partners.*

U.S. Department of Energy (DOE). (2022a). *Alternative Fuels Data Center: Electric Vehicle Charging Station Locations*.

U.S. Department of Energy (DOE). (2022b). *Alternative Fuels Data Center: Iowa Laws and Incentives.*

U.S. Energy Information Administration (EIA). (2022). *Annual Energy Outlook 2022: Transportation Sector Key Indicators and Delivered Energy Consumption*.

Xu, Dan, Huaguo Zhou, Chennan Xue, and Jeffrey LaMondia. (2020). *Impact of Electric and Hybrid Vehicles on Highway Trust Fund in Alabama*. Transportation Research Record Journal of the Transportation Research Board.

FORECASTING BUMPY ROADS AHEAD

An Assessment of Illinois' Transportation Needs

April 4, 2018

A Higher Road for a Better Tomorrow
ILLINOIS ECONOMIC POLICY INSTITUTE
ILEPI

Mary Craighead, AICP

EXECUTIVE SUMMARY

While transportation is a crucial component of the lives of every Illinois resident, employee, and business, Illinois leaders have failed to provide adequate funding. From roads to transit systems, maintenance is being deferred and new projects to address safety or congestion needs are increasingly unlikely. The following report by the Illinois Economic Policy Institute examines existing transportation conditions and assesses funding shortfalls.

Road, bridge, and transit maintenance is lacking.

- The number of "backlog" IDOT roadway miles – indicating deterioration that requires immediate maintenance – has increased by 85%, from 1,700 in 2000 to over 3,300 in 2015.
- 20% of all IDOT roadways are currently in "poor" condition compared to only 8% in 2001.
- If current funding strategies continue, the number of "backlog" road miles and bridges are expected to increase by 101% and 64%, respectively, by the year 2023.
- Less than 60% of systems and 70% of guideway elements in the Regional Transportation Authority's systems are considered to be in "good repair" or within their useful life.

Additional investment will improve congestion issues and contribute to needed safety improvements.

- The average peak hour commuter in the Chicago region experienced 61 hours of delay annually due to congestion, compared to only 52 hours in 2000.
- Over 12,600 fatal and serious injuries were witnessed on state and local roadways from vehicle crashes in 2014.

Over $4.6 billion per year is necessary to bring all roads, bridges, and transit systems into a state of good repair.

- IDOT requires *an additional* $10 billion between 2018 and 2023 to bring all road miles into an acceptable condition and repair all backlog bridges.
- Total capital needs for statewide transit systems total over $41 billion to bring to a state of good repair through the next 10 years, including $2.72 billion per year above existing funding for the Regional Transit Authority and $0.20 billion per year for downstate transit.

Unsustainable funding sources are leading to existing poor conditions.

- The state motor fuel tax generated nearly $1.8 billion in 1999, but only $1.3 billion in 2015 (2017$).
- On average, each Illinois driver paid $158 in motor fuel taxes per year in 2015, $65 less than 1999 (in 2017$) – a 29% decrease.

Massive changes are needed and Illinois cannot depend on federal sources to supply needed funding.

- President Trump's infrastructure plan emphasizes the need for state and local funds to support minimal federal funds.
- The gasoline and special fuel tax rates would need to be increased to $0.85 and $1.00 per gallon, respectively, to generate the additional $4.6 billion needed per year – increases of 347% and 365%.
- A vehicle miles traveled fee can produce similar revenues, with a study completed in 2015 estimating over $3.7 billion in revenues for 2016.

Transportation fees are minimal compared to added vehicle maintenance costs from poorly maintained roadways and average utility expenses.

- Drivers in Chicago are estimated to pay an additional $627 per year from vehicle maintenance due to the inferior roadway system.
- At most, an average Illinois driver currently pays $360 a year – or approximately $30 a month – in state and federal transportation fees.
- The average annual electricity and cable bills are almost 4 times the typical transportation fees.

Illinoisans have gotten used to pothole-filled roads, narrow bridges, significant congestion, and delayed trains, but these experiences should be a rarity, instead of the norm. The state's transportation network is too important to allow it to continue to deteriorate. It is time for lawmakers to seriously discuss viable funding options to address these severe shortfalls so that all current and future Illinoisans can count on a dependable and efficient transportation network that serves their needs.

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Mary Craighead, AICP is the Transportation Policy Analyst at the Illinois Economic Policy Institute. Prior to joining ILEPI, she served as the Coordinator for the Victoria, TX Metropolitan Planning Organization and Senior Transportation Planner for the City of Victoria, TX. She earned a Master of Urban Planning and Graduate Certificate in Transportation Planning from Texas A&M University and a Bachelor of Science in Mathematics and Economics from the University of Evansville.

INTRODUCTION

Transportation is crucial to every Illinois resident, employee, and business. It not only dictates daily decisions of every person, but also serves as the backbone of the economy. The transportation network ensures businesses can deliver their products to markets and that consumers can access those markets, while also guaranteeing the public's access to their jobs, schools, hospitals, and countless other public services.

As crucial as the transportation network is, Illinois' leaders and policymakers have failed to provide adequate funding. From roads to transit systems, maintenance is being deferred and new projects to address safety or congestion needs are increasingly unlikely. The following report by the Illinois Economic Policy Institute examines existing transportation conditions and assesses funding shortfalls. The state's transportation network is too important to allow it to continue to deteriorate. It is time for lawmakers to seriously discuss viable funding options to address these severe shortfalls so that all current and future Illinoisans can count on a reliable and efficient transportation network.

ILLINOIS' TRANSPORTATION NETWORK

Illinois boasts an impressive transportation network, currently ranking third in the nation for the number of roadway miles, interstate miles, and bridges. It is second only to Texas in the number of miles of railway (Figure 1). The state also has 1,100 miles of inland waterways, providing the nation's only all-water connection between the Great Lakes and the Mississippi River system (IDOT, 2017b). To round out the state's infrastructure system, it has over 8,200 miles of bus transit routes within its 63 transit systems and almost 500 public and private airports, including one of the nation's busiest - O'Hare International Airport.

Figure 1: Illinois Transportation Infrastructure and National Context

Transportation Infrastructure (Year)		National Rank
Roadway Miles (2016)	145,892	3
Interstate Miles (2016)	2,185	3
Bridges (2016)	26,704	3
Railway Miles (2012)	6,986	2
Bus Transit Miles (2013)	8,291	9
Inland Waterway Miles (2013)	1,100	8
Public and Private Airports (2013)	478	5

Source(s): FHWA Highway Statistics (roadway, interstate, bridges); BTS State Transportation Statistics (railway, bus transit, waterway, airports)

Use of Infrastructure

Illinois similarly ranks among the top states for population and licensed drivers, totaling almost 13 million residents and 8.5 million licensed drivers, ranking fifth and sixth, respectively (Figure 2). Illinois ranks third among all states for the number of transit trips, totaling over 664 million, behind only New York and California. These figures illustrate the extent to which Illinois' existing infrastructure network is used and the importance to maintain it in the future.

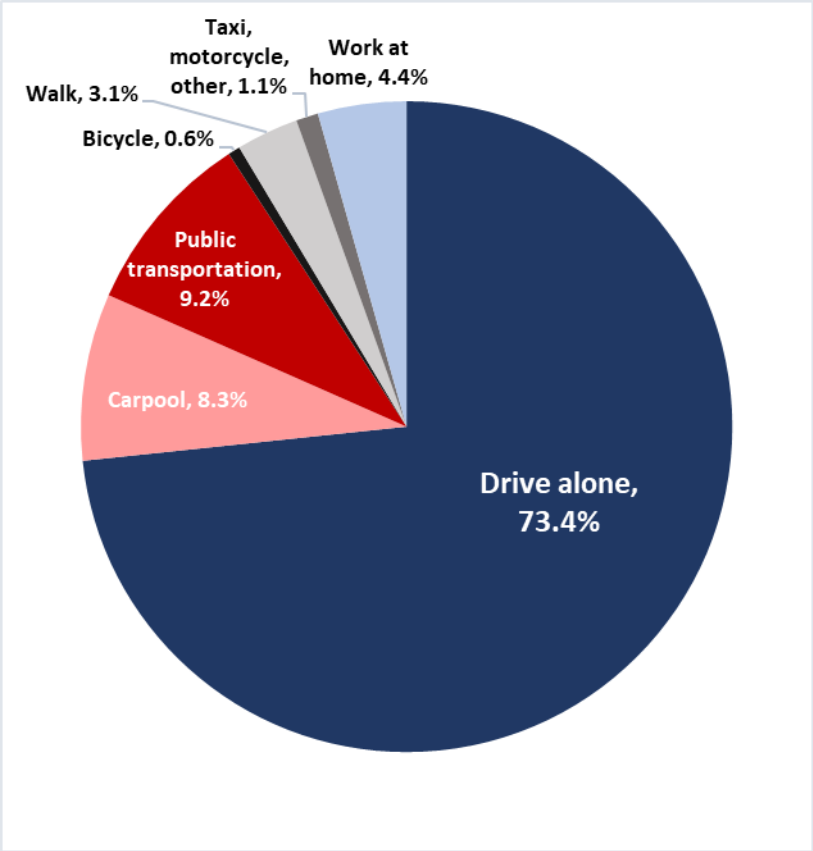
To further provide an understanding of how the population uses the transportation network, Figure 3 summarizes commuting characteristics for Illinois workers. The majority of workers (73%) drive alone, however over 9% use public transportation, which can largely be attributed to the expansive transit network throughout the City of Chicago and surrounding region.

Figure 2: Illinois Transportation Use and National Context

Transportation Use (Year)		National Rank
Population (2016)	12,851,684	5
Licensed Drivers (2016)	8,514,644	6
Registered Vehicles (2016)	10,277,182	7
Unlinked Transit Trips (2013)	664,675,286	3
Airport Enplanements (2013)	43,421,329	6

Source(s): U.S. Census Bureau (population); FHWA Highway Statistics (licensed drivers, registered vehicles); BTS State Transportation Statistics (transit, airport)

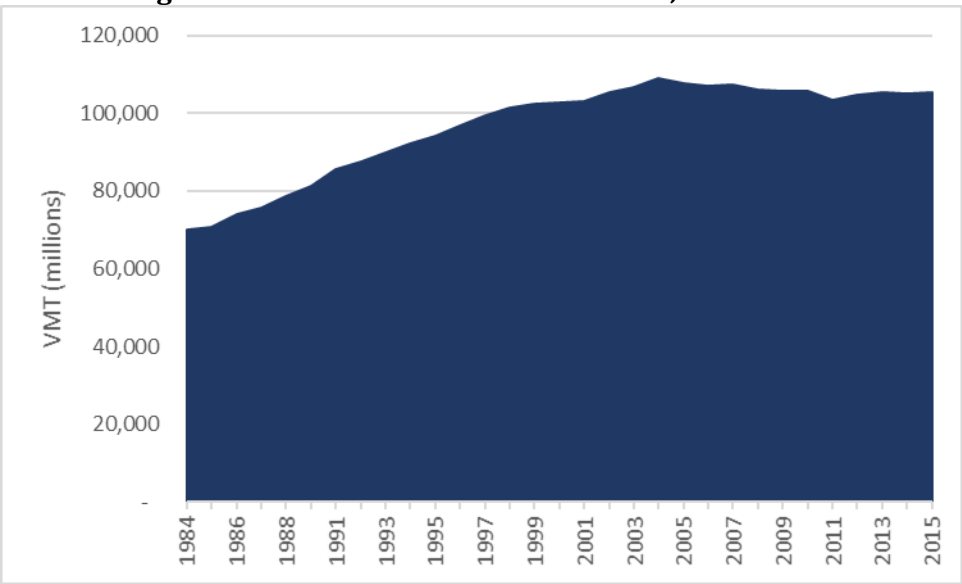
Figure 3: Illinois Commuting Characteristics



Source(s): U.S. Census Bureau, 2016

Offering historical context, Figure 4 illustrates the state's vehicle miles traveled (VMT) since 1984. VMT – which is calculated by IDOT and the Federal Highway Administration (FHWA) using traffic volumes and roadway mileage – can be defined as the number of miles traveled by all vehicles throughout the state and is a basic measurement to understand how much the state's roadway system is being used. It is clear that VMT throughout Illinois significantly increased between 1984 and 2003, reaching over 100 billion miles around 1998. While VMT has remained relatively constant in the last decade – with the Great Recession being a major factor in VMT dips – it is clear that Illinois handles substantial volumes of traffic on its roadway network.

Figure 4: Illinois Vehicle Miles Traveled, 1984-2015



Source(s): FHWA Highway Statistics, Table VM-2

Freight Use

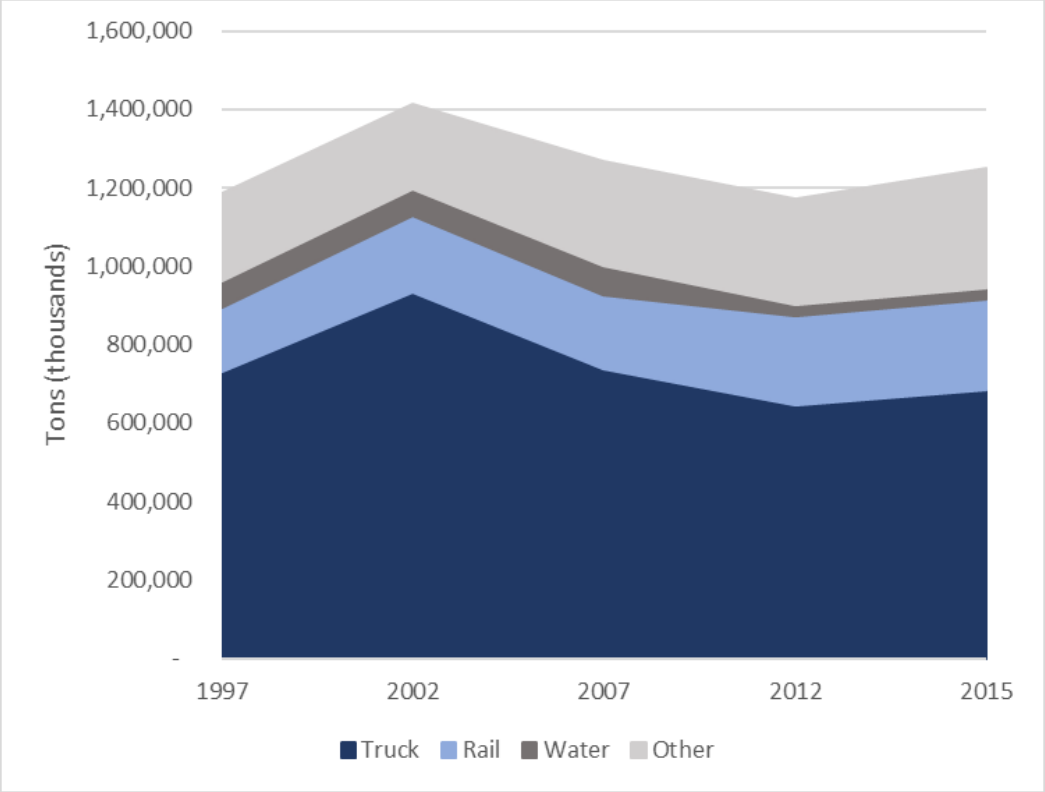
Illinois' expansive transportation system not only serves the state's residents, but also a significant amount of freight traffic. Figures 5 and 6 illustrate the tons and value of freight that is shipped within Illinois, in addition to freight traveling in and out of the state.

As shown in Figure 5, trucks and trains account for the bulk of freight transportation throughout the state. Trucks made up over 60% of the *weight* of freight shipments between 1997 and 2002, but decreased to the 50% range in 2007 and after. Conversely, the weight of shipments by rail increased around 15% to almost 20% over the same time period. Similar to trucks, water freight transportation decreased from around 6% between 1997 and 2007, to only 2% in 2012 and 2015.

Similarly, Figure 6 illustrates the value of freight shipments in Illinois. Trucks account for the majority of the *value* of shipments, carrying over 62% since 1997. Railways and waterways account for around 5% and 2%, respectively, over the same time period. The "Other" category accounts for air, multiple modes, and pipeline transportation. Air in particular makes up a large portion of the value of all freight shipments, ranging between 2% and 12% since 1997.

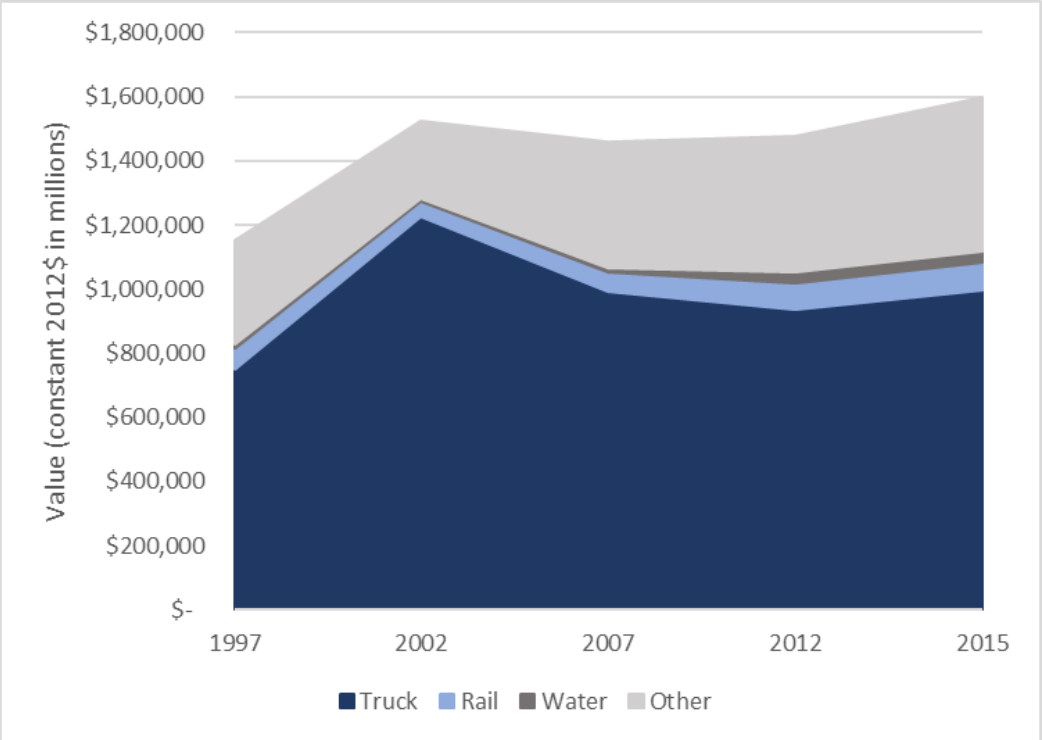
Studying both graphs over time shows that the amount of freight shipped has increased since 1997. When examining the total weight in tons, the amount peaked in 2002 and dipped in 2012, which – similar to VMT – can likely be attributed to the aftermath of the Great Recession. Conversely, such a drastic dip is not observable in the value of freight, with an observable $450 billion difference in value of freight shipments in Illinois between 1997 and 2015.

Figure 5: Illinois Freight in Tons (within, inbound, and outbound), 1997-2015



Source(s): BTS FAF[4] Summary Statistics (BTS, 2017)

Figure 6: Illinois Freight Value (within, inbound, and outbound), 1997-2015



Source(s): BTS FAF[4] Summary Statistics (BTS, 2017)

TRANSPORTATION SYSTEM NEEDS

The previous section illustrated the existing use of Illinois' transportation network. While existing use of the system is substantial – and, as illustrated through both general VMT and freight shipments, is clearly increasing – these figures do not convey the existing condition of the state's transportation networks. Use of the transportation network has continued to increase over years, but the corresponding maintenance to keep up with such growth has not.

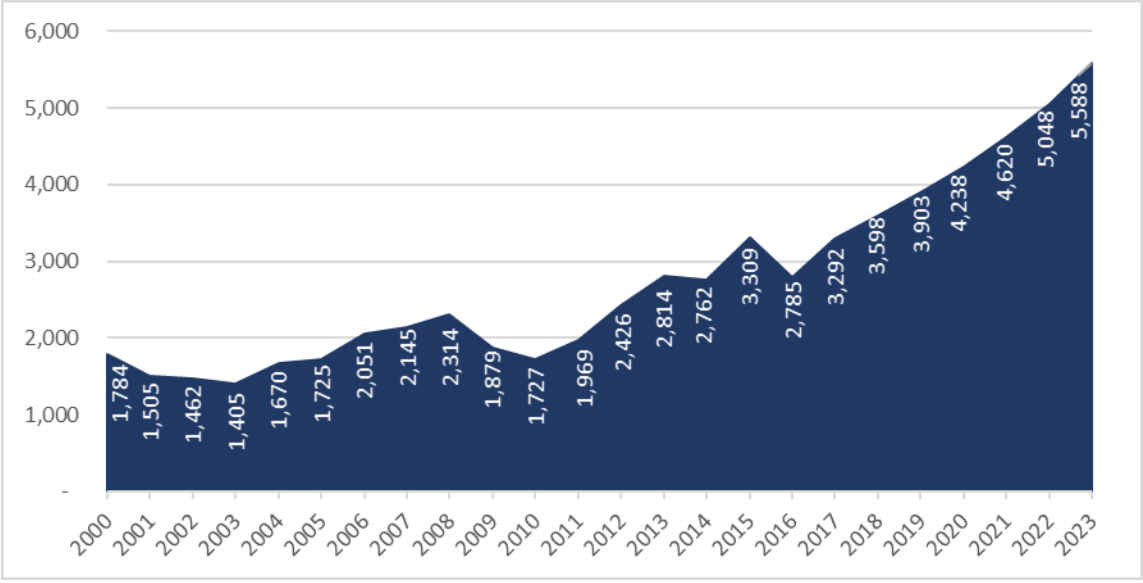
Roads and Bridges

Roads and bridges serve as the backbone of the transportation network in Illinois. The majority of Illinoisans commute by driving, a significant portion of freight travel is done entirely by truck, and the last miles of freight shipments often depend on trucks to reach their final destination.

Despite this, an increasing number of roads and bridges are being classified as "backlogged" by the Illinois Department of Transportation (IDOT). Backlog indicates that a roadway or bridge has deteriorated to the point of requiring maintenance immediately. Figures 7 and 9 illustrate the number of roadway miles and bridges on the IDOT system that were both historically considered backlogged and are expected to be in the future without a change in investment.

The number of backlog miles has increased over time, from approximately 1,700 in 2000 to over 3,300 in 2015, an 85% increase (Figure 7). The number of backlog miles is expected to double to more than 5,500 between 2016 and 2023 if current funding strategies are utilized.

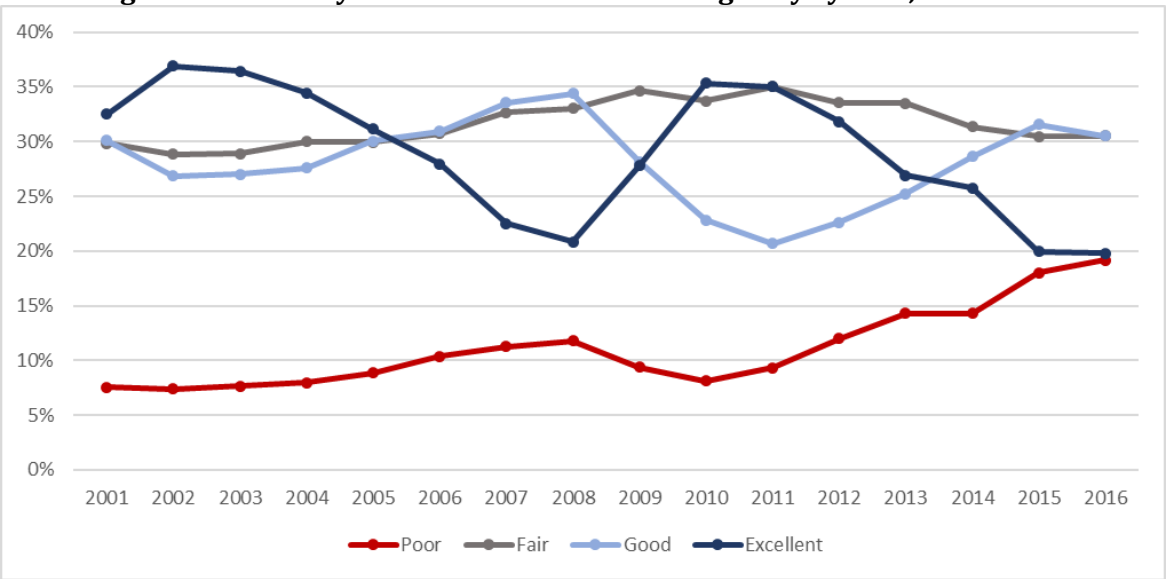
Figure 7: Backlog Miles on IDOT Roadways, 2000-2023



Source(s): IDOT FY 2018-2013 Proposed Highway Improvement Program

Figure 8 further illustrates the condition of IDOT's state highway system. Since 2001, the percentage of total mileage of the state highway system considered "poor" has consistently grown. IDOT evaluates each mile through a Condition Rating System (CRS) and assigns a value representing the overall condition of the roadway and pavement needs. The four condition ratings – poor, fair, good, and excellent – correspond to a range of values from the CRS.

Figure 8: Roadway Condition on IDOT State Highway System, 2001-2016

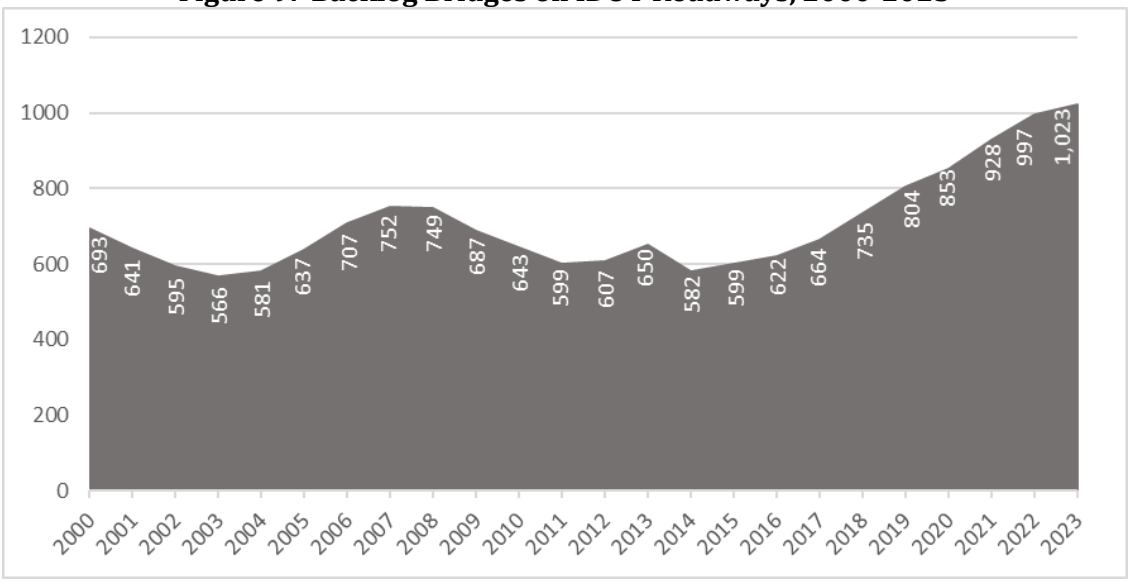


Source(s): IDOT Condition Rating Survey Summary Report

While the percentage of roadway miles considered "excellent" and "good" oscillate over the years, the percentage of "poor" roadway miles have steadily increased (Figure 8). Currently, almost 20% of all IDOT roadways are considered to be in poor condition, compared to only 8% in 2001. Similarly, the percent of miles considered to be in excellent condition – while vacillating over the years – has decreased from 33% in 2001 to only 20% in 2016.

The number of bridges considered to be backlogged have actually decreased from 693 in 2000 to 622 in 2016, however the number is expected to reach over 1,000 by 2023 if current funding techniques are continued to be employed. Currently 8% of bridges are considered backlogged, however 26% are "accruing," which is defined by IDOT as a bridge that will require improvements within 6 years (IDOT, 2017e).

Figure 9: Backlog Bridges on IDOT Roadways, 2000-2023



Source(s): IDOT FY 2018-2013 Proposed Highway Improvement Program

To offer further perspective on Illinois' current bridge condition, Figure 10 summarizes the ages of all bridges in Illinois, both state-owned and local. As of 2016, over 31% of all bridges are over 50 years old and 62% are over 30 years old. While bridges can often last longer than their designed life – particularly newer bridges that use improved construction materials – the typical design life of a bridge is 50 years old (FHWA, 2011). It is an especially bleak situation for Illinois, with almost a third of all bridges having exceeded their design life.

Figure 10: Age of All Bridges in Illinois, 2016

Age	Count	Percent of Total
0-9	2,420	9%
10-19	3,317	12%
20-29	4,498	17%
30-39	4,971	19%
40-49	3,335	12%
50-59	3,626	14%
60-69	1,210	5%
70-79	662	2%
80-89	1,027	4%
90-99	524	2%
Over 100	1,114	4%
Total	26,704	

Source: FHWA Highway Statistics, Table BR-4

Safety

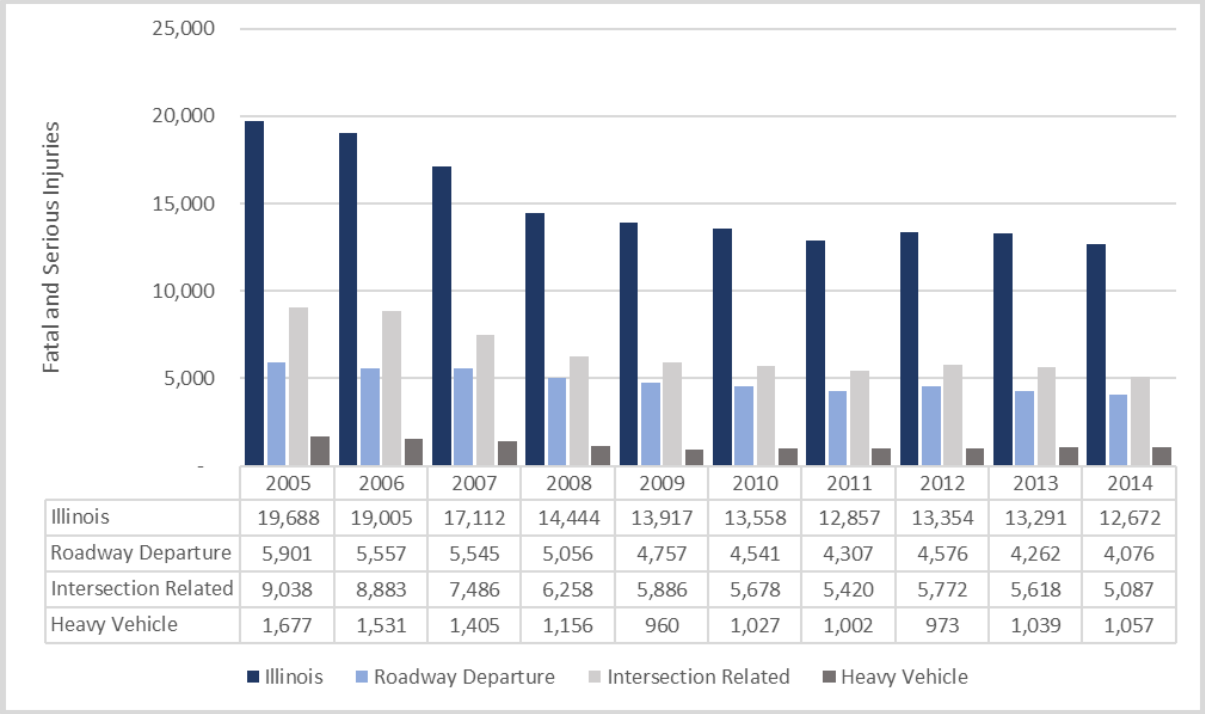
Beyond standard maintenance, safety is a primary indicator of potential roadway improvements that are needed. Safety issues and vehicle crashes cannot be entirely avoided solely by increased investment. However, the question remains: how many crashes could have been avoided if additional safety measures were implemented?

Over 12,600 fatal and serious injuries were witnessed on state and local roadways from vehicle crashes in 2014 (Figure 11). While this represents a decrease in 7,000 injuries compared to 2005 – likely due to safer vehicle designs and more prevalent use of seatbelts nationwide – the ultimate goal should be zero. Additional investments may have helped to avoid a portion of these crashes, and lawmakers should be cognizant of the potential life-saving safety programs and improvements that adequate funding can offer.

In particular, the three types of crashes identified in Figure 11 – roadway departure, intersection related, and heavy truck – often look towards specific engineering and roadway planning techniques to reduce the number and severity of crashes. They represent prime candidates where increased investment may have offered assistance in decreasing these counts.

Similarly, Figure 12 shows how Illinois has continued to grapple with crashes at public railroad crossings. While fewer crashes were observed in 2016 compared to 2007, they have not steadily decreased over the years, with 2015 peaking almost as high as earlier years. Overall, Illinois was responsible for 7% of all railroad crossing crashes in the United States in 2015, the highest percentage observed between 2007 and 2015. With rail and freight movements being primary transportation modes in Illinois, this is an area of particular interest for the state. Additional investments could improve crossing signals and safety measure to help reduce such crashes.

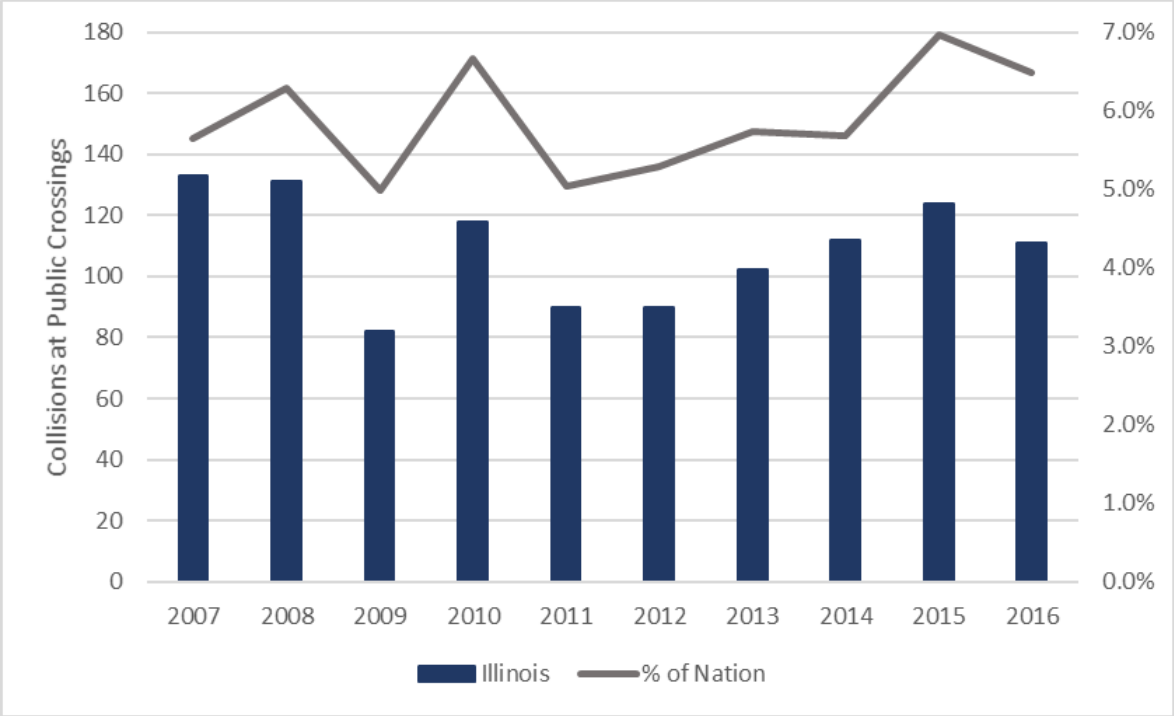
Figure 11: Fatal and Serious Injuries from Illinois Vehicle Crashes, 2005-2014



	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Illinois	19,688	19,005	17,112	14,444	13,917	13,558	12,857	13,354	13,291	12,672
Roadway Departure	5,901	5,557	5,545	5,056	4,757	4,541	4,307	4,576	4,262	4,076
Intersection Related	9,038	8,883	7,486	6,258	5,886	5,678	5,420	5,772	5,618	5,087
Heavy Vehicle	1,677	1,531	1,405	1,156	960	1,027	1,002	973	1,039	1,057

Source(s): IDOT Strategic Highway Safety Plan

Figure 12: Collisions at Public Railroad Crossings in Illinois, 2007-2016



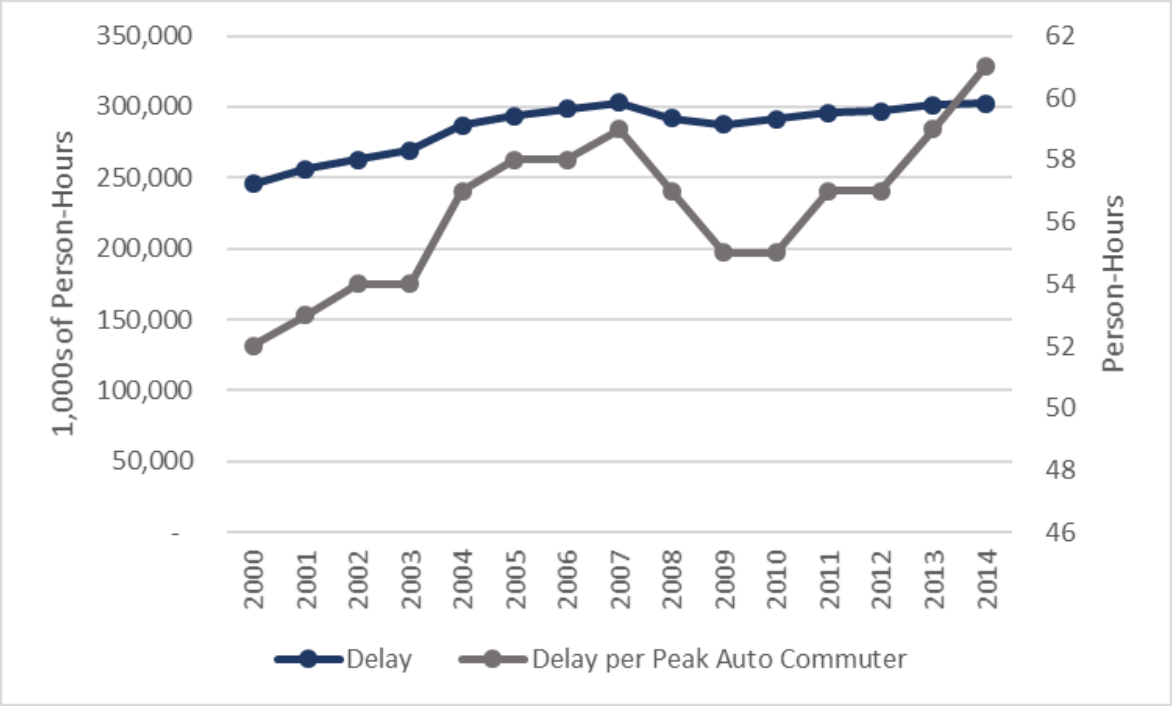
Source(s): ICC Crossing Safety Improvement Program

Mobility

Similar to safety, mobility – and specifically congestion – is a crucial indicator of potential roadway improvements needed. Congestion is already a serious issue throughout the state, and will continue to worsen without improvements. It leads to inconveniences for both residents and businesses, wastes fuel, creates air pollution, and causes negative economic impacts due to wasted time for workers, businesses, and freight shipments. While increased investments cannot entirely solve congestion issues, investments in new projects *can* improve mobility.

The Chicago region and Northeast Illinois are the primary culprits of congestion in Illinois. The amount of delay in the region has steadily increased since 2000, reaching over 302 million person-hours in 2014 (Figure 13). This is an increase of over 57 million person-hours compared to the level of delay experienced in 2000. Similarly, the amount of annual delay per peak hour commuter has reached an all-time high at 61 person-hours in 2014. While the recession significantly decreased the amount of delay per commuter between 2008 and 2012, delay significantly increased again in 2013 and 2014.

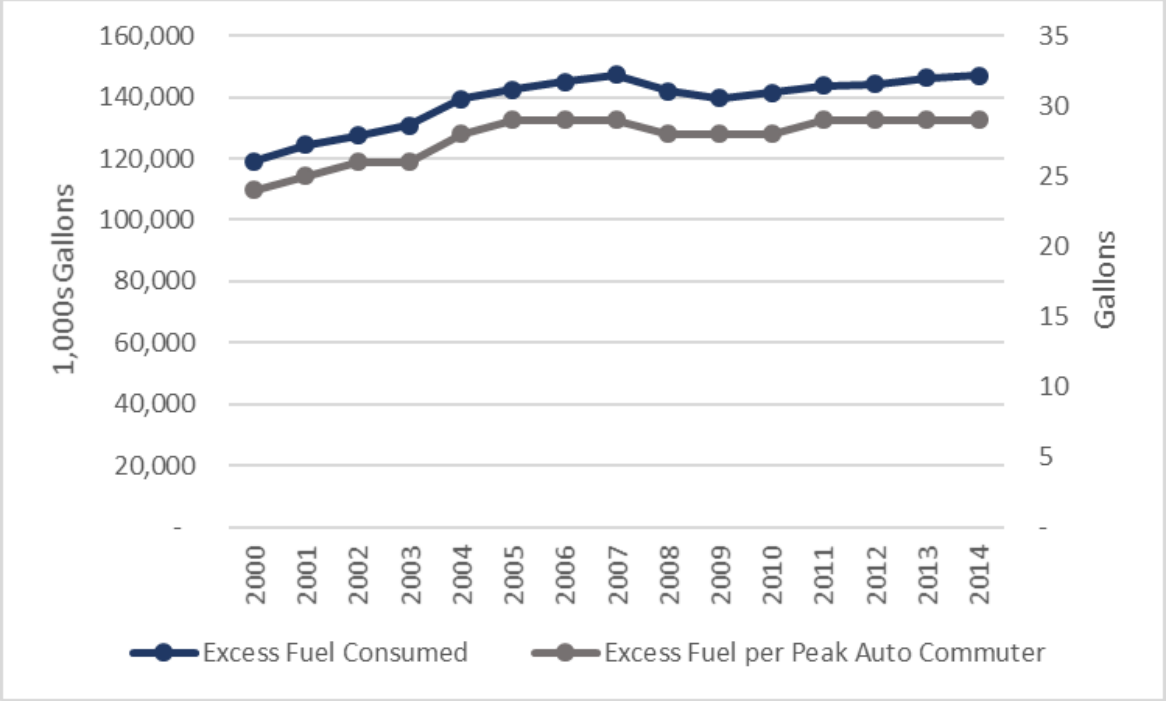
Figure 13: Annual Delay from Congestion in the Chicago Region, 2000-2014



Source(s): TTI 2015 Urban Mobility Scorecard

Likewise, the amount of fuel that has been used due to congestion throughout the Chicago region has grown by 23% between 2000 and 2014 (Figure 14). Increasing from 119 million to 147 million gallons of fuel, congestion leads to wasted money on fuel, as well as air quality problems. Each commuter wasted 29 gallons of gas in 2014, up from the 24 gallons wasted in 2000.

Figure 14: Annual Excess Fuel Consumed from Congestion in the Chicago Region, 2000-2014



Source(s): TTI 2015 Urban Mobility Scorecard

Public Transportation

While secondary to the roadway network, public transit plays a crucial component in Illinois' transportation system. Illinois' transit systems can be divided between the Chicago region and Northeast Illinois and downstate Illinois.

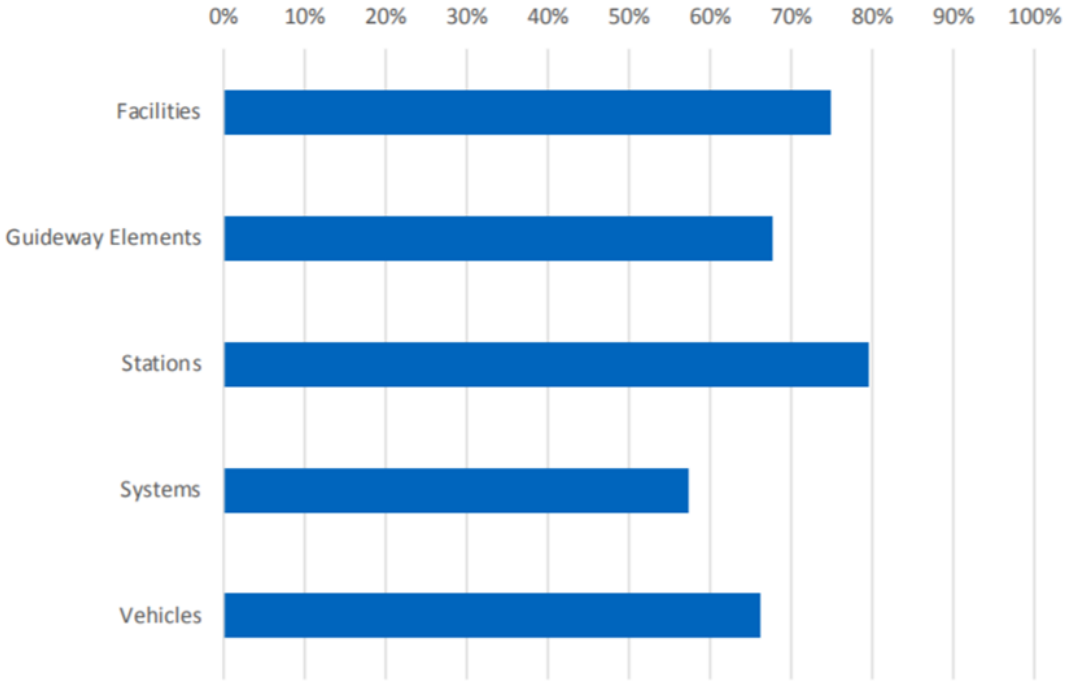
Chicago area transit is managed by one organization, the Regional Transportation Authority (RTA); the RTA provides financial and planning oversight for the three major transit systems in the region – the Chicago Transit Authority (CTA), Pace suburban bus, and Metra commuter rail – and accounts for 98% of all public transit trips in Illinois. Furthermore, it has the most expansive public transit infrastructure system, including buses, commuter rail, subways, and elevated trains.

Similar to the roadway system, the RTA systems are also experiencing massive maintenance needs throughout every component of its system. Currently 31% of all RTA assets are not in a state of good repair (RTA, 2017a). Specifically, less than 60% of RTA systems (signals, fare collection equipment, phones, etc.) and 70% of RTA guideway elements (track, rail, bridges, and ties) are considered to be in "good repair" or within their useful life (Figure 15). As identified in their assessment of needs in 2015, over 51% of total capital needs in the next 10 years – $19.4 billion – is required to only address the current backlog. Furthermore, the RTA will have over $30 billion of backlog needs by 2033 if current investment levels remain the same (RTA, 2016). Exemplifying such needs, almost half of the value of RTA's guideway elements and vehicles are considered to be in "marginal" or "worn" condition. Over $5 billion worth of the RTA's vehicles and $9 billion of the systems guideway elements are in the same dismal conditions (Figure 16).

Downstate Illinois' transit systems number more than 60, made up of both urban and rural systems. The most significant system is within the St. Louis metropolitan area, which is referred to as the Metro-East Public Transportation District, and includes Madison, Monroe, and St. Clair Counties. In

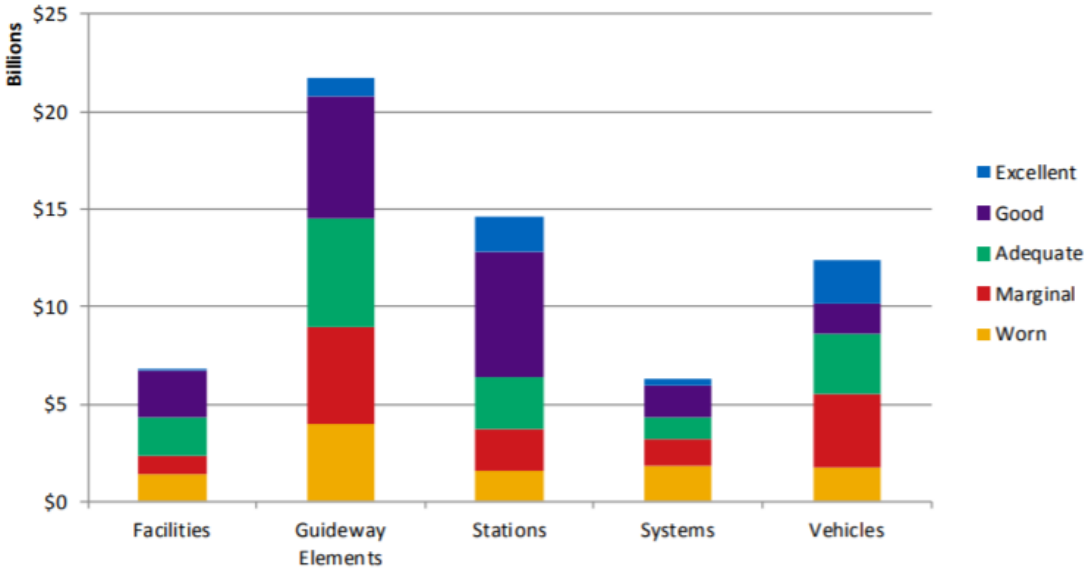
2016, the 10-year outlook for funding needed to reach a state of good repair within Metro-East systems totaled over $800 million for fixed guideway systems, $400 million for vehicles, and approximately $70 million for facilities. Similarly, remaining downstate urban and rural systems need $575 million for vehicles and almost $200 million for facilities.

Figure 15: Percent of RTA Assets Within Their Useful Life, 2015



Source(s): RTA Capital Asset Condition 2016: Year 5 Assessment

Figure 16: Distribution of Asset Conditions (2015$)



Source(s): RTA Capital Asset Condition 2016: Year 5 Assessment

FUNDING NEEDS

The previous section clearly demonstrates that Illinois has significant maintenance needs across all transportation systems. Investment is needed to eliminate the massive amounts of backlog and bring all roads, bridges, and transit systems into a state of good repair. Additional investment will be required to continue proper maintenance and invest in new projects that address current and future congestion, safety, and overall mobility needs.

While difficult to estimate complete needs for all transportation systems throughout Illinois, the following section provides select examples of needed funding for some of the most important systems. However, it is crucial to remember that every mode of transportation – roads at both the state and local levels, transit systems, and airports to name a few – are lacking adequate funding.

IDOT Maintained Highways and Bridges

As described previously, a significant portion of highways and bridges within IDOT's jurisdiction are in poor condition and classified as "backlog." By 2023, over 5,500 roadway miles and 1,000 bridges will be backlogged, which is defined by IDOT as requiring immediate improvement due to the deteriorated condition (IDOT, 2017d). The following section provides an approximate value of what it will cost to bring IDOT's system out of backlog and into acceptable condition in the next 5 years.

This analysis utilizes information from IDOT's past four Highway Improvement Programs to estimate an average cost per road mile and bridge. Figure 17 summarizes the roadway and bridge maintenance projects that were proposed in IDOT's multi-year plan between fiscal years 2015 and 2023. Each plan covers a six-year period and identifies the anticipated number of road miles and bridges that would be improved over the course of the plan and the corresponding costs. An average cost of maintenance improvements is determined by first dividing the total cost by the number of miles or bridges identified in each plan, then averaging the costs identified over the four plans and inflating to 2017 dollars.

Figure 17: Proposed IDOT Maintenance Projects and Corresponding Costs, FY 2015-2023

	FY 18-23	FY 17-22	FY 16-21	FY 15-20
System Maintenance Improvements (miles)*	2,440	2,523	1,431	1,841
Bridge Maintenance Improvements (bridges)**	947	994	813	826
Roadway Maintenance (millions)				
Total	$4,330	$4,118	$2,292	$2,733
Safety Projects	$466	$466	$409	$454
Maintenance without Safety	$3,864	$3,652	$1,883	$2,279
Bridge Maintenance (millions)	$2,600	$1,962	$1,492	$1,604
Cost Per Mile^	$1.584	$1.447	$1.316	$1.238
Cost Per Mile (millions 2017$)	$1.584	$1.477	$1.365	$1.286
Cost Per Bridge^^	$2.746	$1.974	$1.835	$1.942
Cost Per Bridge (millions 2017$)	$2.746	$2.014	$1.903	$2.017
Average Cost Per Mile (millions 2017$)	$1.428			
Average Cost Per Bridge (millions 2017$)	$2.170			

* Includes reconstruction, resurfacing, and widening projects (does not include safety projects)
** Includes bridge replacement, rehabilitation projects, and minor structure repairs
^ Cost per mile calculated using Maintenance without Safety total divided by miles of system maintenance
^^ Cost per bridge calculated using Bridge Maintenance total divided by number of bridges

Source(s): IDOT Proposed Highway Improvement Programs for FY 2015-2020, FY 2016-2021, FY 2017-2022, and FY 2018-2023

The average maintenance and improvement cost per road mile is determined to be $1.428 million per mile. The average improvement cost per bridge is estimated to be $2.170 million per bridge. While this analysis provides an approximate cost, it does have several shortcomings. This technique groups together every type of project – from complete reconstruction or replacement to simple resurfacing and minor repairs – and does not account for different pavement types, number of lanes of a roadway, type of roadway (interstate or minor state highway), or the varying complexities of each project. Consequently, while an improvement on one roadway mile may be $1.428 million, others may be significantly higher or lower.

While this remains a shortfall, similarly limited information related to needed roadway and bridge improvements in the future is all that is available. The number of roadway miles and bridges needing improvement are estimated by IDOT through their Condition Rating Survey (CRS), however the exact type and location of such improvements is not detailed. Therefore, it is assumed that the average cost over past years provides an average cost for all types of projects and offers a similar average cost for future needs that accounts for a variety of projects.

IDOT requires an additional $7.978 billion to bring all road miles into an acceptable condition and $2.219 billion to adequately repair all bridges by the year 2023 (Figure 18). It should be noted that this is needed funding *in addition* to the existing funding IDOT plans to receive through the year 2023 and does not account for additional mobility projects to address congestion.

Figure 18: Estimated Funding Needed to Eliminate Backlog Road Miles and Bridges on IDOT Systems, 2018-2023 (2017$)

	Backlog*	Cost	Total
Road Miles	5,588	$1,427,840	$7,978,769,865
Bridges	1,023	$2,170,074	$2,219,985,325
TOTAL			$10,198,755,189
* Backlog figures identified by IDOT for 2023			

Source(s): IDOT Proposed Highway Improvement Programs for FY 2018-2023

Chicago Transit Systems

As previously described, the Regional Transportation Authority (RTA) not only represents the largest transit system in Illinois, but the third largest in the nation. It is a prime example of how a lack of transportation investment can impact a transit system and how much additional investment is needed in Illinois.

The RTA – including the Chicago Transit Authority, Pace suburban bus, and Metra commuter rail – currently has a backlog totaling over $19 billion. In addition, normal capital reinvestment needed over the next 10 years totals over $18 billion. In all, the RTA is facing a budget shortfall of $37.7 billion (Figure 19). Without this funding, the percent of all RTA assets considered to not be in a state of good repair will increase from 31%, currently, to 37% in 2035 (RTA, 2017a).

In order to only maintain the system as it currently stands, keeping all existing backlog, a total annual funding level of $1.54 billion is required (Figure 20). The RTA currently operates with around $785 million annually, which is just over half of what would be needed. Figure 20 further summarizes the annual funding levels to reach a total state of good repair (SGR) for all RTA systems. To reach a SGR within 10 years, the RTA will require an additional $2.6 billion annually, or over 4 times its existing budget. Even to reach a SGR within 30 years, almost 3 times as much annual investment is necessary.

Figure 19: RTA Capital Funding Needs, 2017-2026 (billions 2015$)

	Backlog	Normal Reinvestment			Total
		Replace	Rehab	Capital Maintenance	
CTA	$12.456	$5.729	$4.199	$0.698	$23.082
Metra	$6.139	$4.260	$1.282	$0.323	$12.004
Pace	$0.755	$1.150	$0.561	$0.120	$2.586
Total	$19.350	$11.139	$6.042	$1.141	$37.672

Source(s): RTA Capital Investment Needs of the RTA Region: Bridge the Gap

Figure 20: Annual Funding Levels Required to Attain State of Good Repair (SGR) for all RTA Systems (billions 2015$)

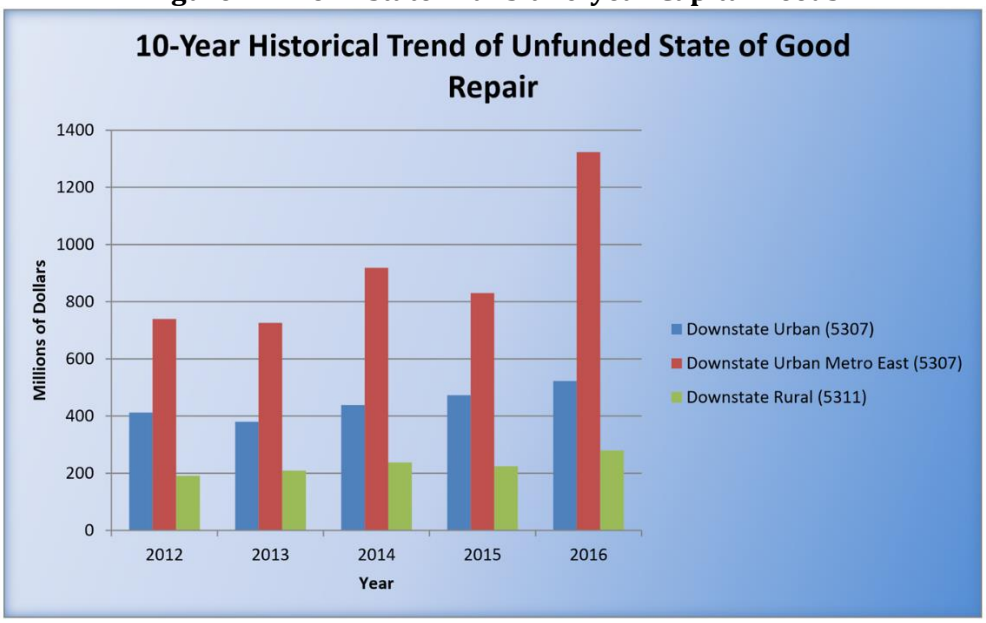
	Annual Funding	Additional Required	Times Existing Funding
Existing Capital Funding	$0.785	-	-
10 Years to SGR	$3.410	$2.625	4.34
20 Years to SGR	$2.580	$1.795	3.29
30 Years to SGR	$2.330	$1.545	2.97
Maintain Backlog	$1.540	$0.755	1.96

Source(s): RTA Capital Investment Needs of the RTA Region: Bridge the Gap

Downstate Transit Systems

Similar to Chicago, transit systems throughout downstate Illinois are facing massive budget shortfalls to adequately maintain their equipment and facilities. In 2016, over $2 billion is estimated to be needed over the following 10 years, which was an increase of over $600 million from the same projection made the previous year. Figure 21 illustrates the growing needs throughout all systems. While the Metro-East district clearly has the most needs, both the needs of urban and rural systems are also steadily growing.

Figure 21: Downstate Transit 10-year Capital Needs



Source(s): Illinois Public Transportation Association, 2017

Total Statewide Funding Needs

As exemplified through the previous sections, transportation system needs are massive throughout Illinois and will continue to grow if action is not taken. Figure 22 summarizes total needs to address current and future backlog through 2023 on IDOT maintained roadways and bridges and total transit needs to reach a state of good repair, including both RTA and downstate transit systems, within the following 10 years. Both totals were divided by corresponding number of years it covers to provide a general estimate per year of $4 billion. It should be understood that this total per year is an estimate that does not take into account inflation or specific agency needs, which may require varying funding needs over longer time periods. It should also be noted that this total only represents needs to address capital backlog, or maintenance, needs and does not account for new projects.

Figure 22: Total Capital Needs to Address Backlog for IDOT and Transit Statewide (2017$)

Mode	Agency	Time Period	Total	Total Per Year
Roads & Bridges	IDOT	2018-2023	$10.20	$1.70
Transit	RTA*	2017-2026	$39.07	$2.72
	Downstate Transit**	2017-2026	$2.04	$0.20
	TOTAL TRANSIT		$41.11	$2.93
TOTAL ESTIMATED TRANSPORTATION NEEDS PER YEAR (2017$)				$4.63

* The total needs shown in Figure 19 was converted into 2017$ from 2015$; the total per year is the value shown in Figure 20, that subtracts the RTA's existing funding and converts into 2017$

** The total illustrated in Figure 21 for 2016 was assumed to be in 2016$ (the original source does not specify); this figure was converted into 2017$

EXISTING FUNDING SHORTFALLS

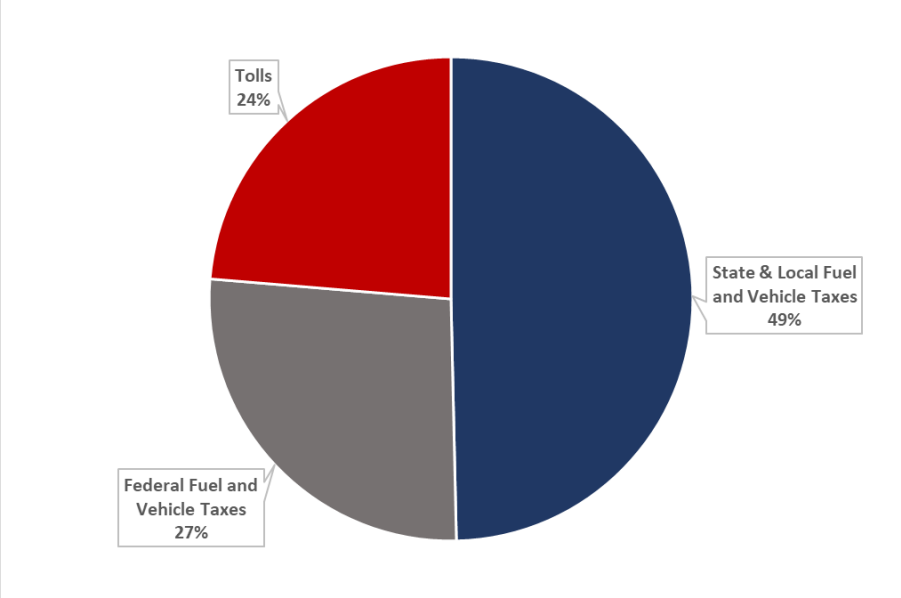
Illinois' transportation network is funded by a combination of federal, state, and local funding. However, unsustainable funding sources are leading to the state's current poor conditions and exorbitant needs. This section will examine the state's existing funding sources and the shortfalls inherent to those sources.

Federal funding is distributed from the Federal Highway Trust Fund (HTF) to all states based on funding formulas. The HTF is generated by motor fuel taxes, tire taxes, heavy truck taxes, and additions from the general fund. In 2015, over 80% was made up of gasoline and diesel motor fuel taxes (FHWA, 2016).

Similarly, Illinois' funding is generated largely from user fees in the form of motor fuel taxes and vehicle registration fees (IDOT, 2017d). State revenues are separated between projects on state-maintained roadways – managed by IDOT – in addition to being divided amongst counties and municipalities throughout the state based on specific formulas that take into account population, motor vehicle licenses, and road mileage (IDOT, 2017f).

Figure 23 summarizes the distribution of user fee revenues in Illinois in 2015 that are used for both highway and transit purposes. While other sources – including other state or local taxes, contributions from the Illinois general fund, and transit farebox revenues – do contribute to overall transportation funding, these user fees are the predominant source. Specifically, approximately 50% of user based revenues are generated by state and local taxes, 27% are attributed to federal resources.

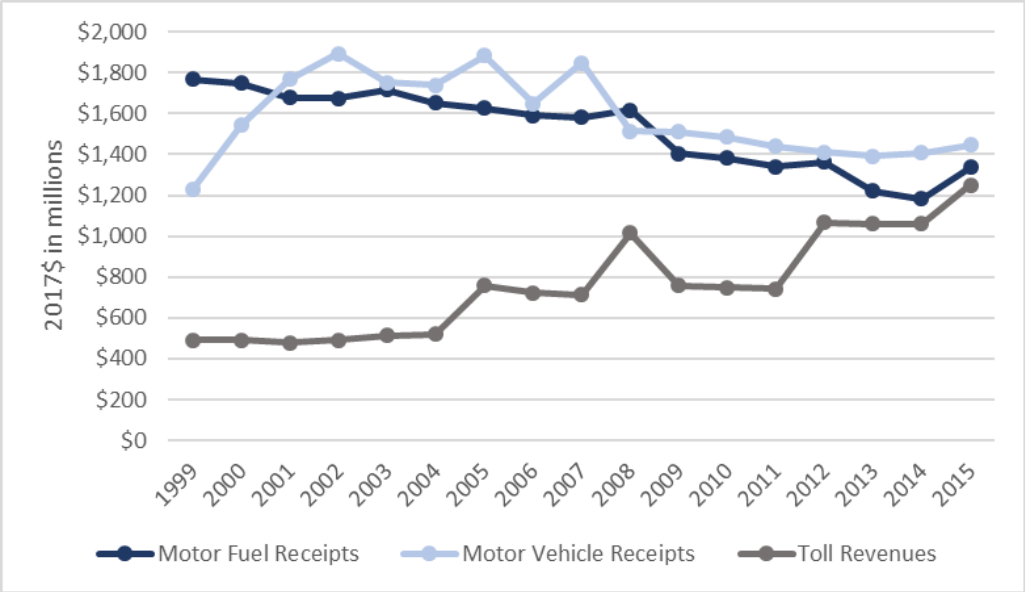
Figure 23: Illinois Highway User Revenues from All Levels of Government, 2015



Source(s): 2015 FHWA Highway Statistics, Table HDF

Figure 24 takes a closer look at state highway user revenues over time. While the motor fuel tax formerly provided the most revenue, topping out at nearly $1.8 billion (in 2017$) in 1999, it has been steadily decreasing over time, and only generated $1.3 billion in 2015. Specifically, the amount generated by the Illinois state fuel tax was 25% less in 2015 than in 1999. This decrease is the crux of transportation funding issues in Illinois.

Figure 24: Illinois State Highway User Revenues, 1999-2015 (2017$)

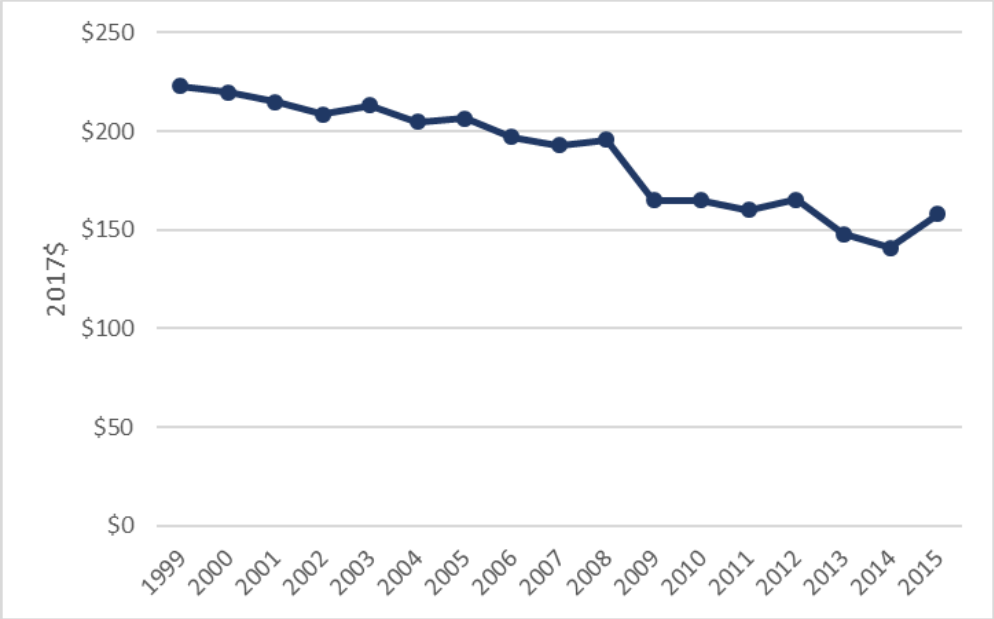


Source(s): 2015 FHWA Highway Statistics, Table HDF

Historically, the tax per gallon appropriately generated revenues based on a person's driving habits. However, due to the nature of the tax – being a tax per gallon as opposed to a tax on the cost – revenues have fallen as vehicles have become increasingly fuel efficient. Furthermore, both federal

and Illinois motor fuel taxes have not been increased since 1993 and 1991, respectively; and since neither are indexed to inflation, the purchasing power of these funding sources is significantly less now than when originally adopted.

Figure 25: Average Motor Fuel Tax Revenues Per Licensed Driver in Illinois, 1999-2015 (2017$)



Source(s): FHWA Highway Statistics, Table SDF and Table DL-1C

Specifically, each driver in Illinois paid $65 less in motor fuel tax per year in 2015 compared to 1999 – a 29% decrease. As illustrated in Figure 25, drivers in Illinois have been contributing less and less over time to support the maintenance and construction of the state's transportation facilities.

ILLINOIS' FUNDING FUTURE

Understanding the importance of Illinois' transportation network, the scope of the state's transportation maintenance needs, and the corresponding price tag, additional revenues must be considered. Funding has historically come from a combination of federal and state sources, however the state may soon be facing an even larger shortfall if the federal government pursues the strategy recently proposed in President Trump's infrastructure plan. The $1.5 trillion proposal, released on February 12, 2018, emphasizes the need to leverage federal funding with local or private support. Specifically, only $200 billion of direct federal funding was proposed through a combination of five major programs to support infrastructure ranging from transportation to electricity and broadband systems (The White House, 2018).

The general trend throughout the programs is increased state and local support. For example, the largest funding is allotted to the Infrastructure Incentives Program at $100 billion. Most notably, only 20% of total projects costs will be covered by federal funds, with the remaining generated by local sources. Similarly, the plan offers $20 billion to the Transformative Projects Program, of which federal funds will cover between 30% and 80%, depending on whether the project is in the demonstration (30%) or capital construction (80%) stage. Also, $20 billion will support existing Infrastructure Financing Programs, like the Transportation Infrastructure Finance and Innovation Act (TIFIA) (The White House, 2018). TIFIA is a credit assistance program for large-scale

transportation projects, designed to leverage private co-investment by the federal government providing supplemental capital (DOT, 2017).

Increasing Existing User Fees

Understanding this, Illinois policymakers are now faced with the question of how Illinois will respond to close the $4.6 billion a year funding shortfall: increase existing user fees or consider new funding options? Figures 26-27 summarize examples of new motor fuel tax and vehicle registration fee rates that would be necessary to only address existing backlog on IDOT roads and bridges and statewide transit systems.

The gasoline and special fuel (including diesel fuel) tax rates would need to be as high as $0.85 and $1.00 per gallon, respectively, in order to generate an additional $4.6 billion per year. This only represents one example, as these two rates can be slightly altered to generate similar revenues, but this provides an example of the extreme increase needed. These rates would represent a 347% increase in the gasoline tax and a 365% increase in the special fuel tax.

Figure 26: Example Motor Fuel Tax Rates to Address Backlog Deficit

	Gasoline	Special Fuels	Total
Gallons Taxed (2015)	5,085,246,374	1,651,477,813	6,736,724,187
Existing Rates	$0.190	$0.215	-
Revenues from Existing Rates	*$966,196,811*	*$355,067,730*	*$1,321,264,541*
Proposed New Rates	$0.850	$1.000	-
Revenues from New Rates	*$4,322,459,418*	*$1,651,477,813*	*$5,973,937,231*
Difference	$3,356,262,607	$1,296,410,083	$4,652,672,690

Source(s): FHWA Highway Statistics, Table MF-2 (gallons)

Similarly, as shown in Figure 27, the vehicle registration fees for automobiles and light-duty trucks would require an increase of $578 per vehicle to generate the needed revenues – a 472% increase. While heavy trucks also pay registration fees, the rates vary extensively by type of truck and weight and data on varied truck class registrations is not available. Additionally, a significant portion of registered vehicles in Illinois are automobile sand light-duty trucks, making a rate change more impactful for those vehicles. Consequently, only automobiles and light-duty trucks were considered in this example. A combination of heavy truck fee changes in addition to automobiles and light truck would also be likely.

Figure 27: Example Registration Fees to Address Backlog Deficit

	Automobiles and Light-Duty Trucks
Registered Vehicles (2015)	9,704,436
Existing Rates	$101
Revenues from Existing Rate	*$980,148,036*
Proposed New Rate	$578
Revenues from New Rate	*$5,609,164,008*
Difference	$4,629,015,972

Source(s): FHWA Highway Statistics, Table MV-1 and MV-9 (registrations)

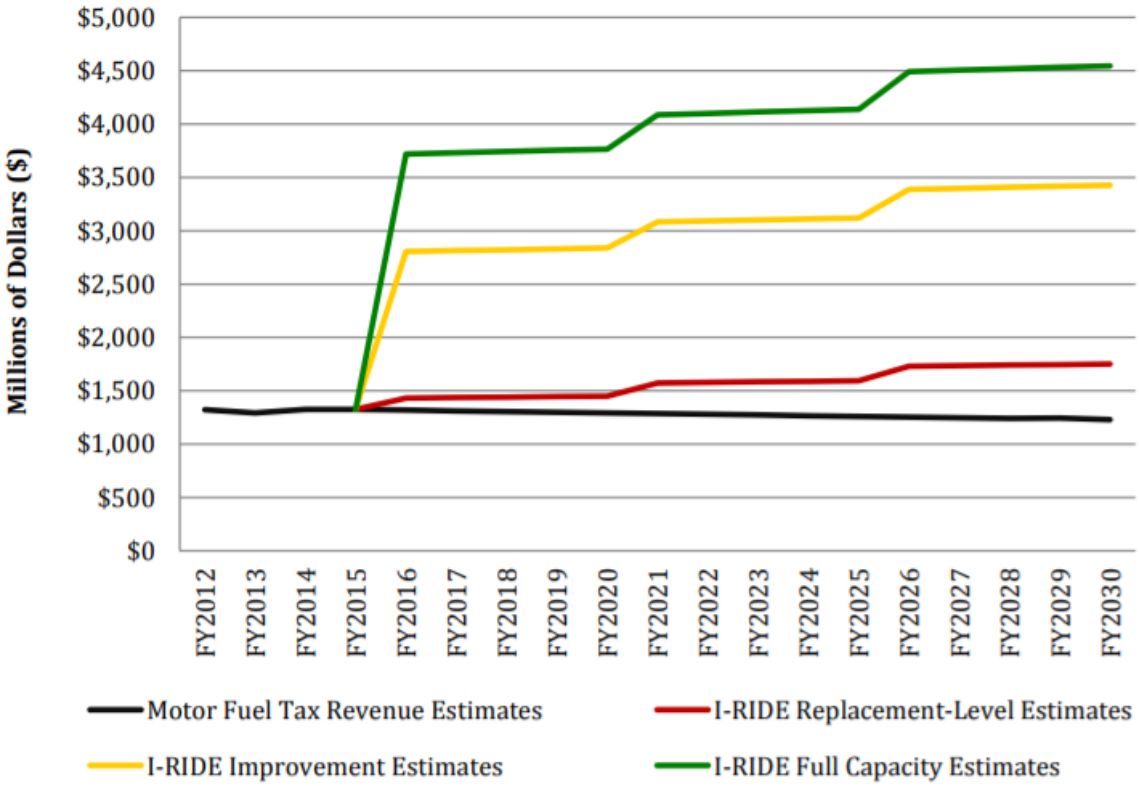
Implementing New Revenue Sources

Considering the extreme increases required within existing revenues sources, alternate funding mechanisms may be required. As proposed in a 2015 report by the Illinois Economic Policy Institute,

The I-RIDE Proposal: A Smart, Reliable Policy to Fund Transportation Infrastructure, a vehicle miles traveled fee is a prime example. This new policy would impose a road user fee for each mile traveled by a vehicle as a means to equitably charge users by the rate at which the infrastructure is used.

A variety of rates were considered, however what is identified as the "full capacity" rates stand at $0.04 per mile for passenger vehicles and single unit trucks, $0.045 per mile for buses, and $0.05 per mile for multiple unit trucks was the preferred scenario. This is the highest collection of rates proposed and was anticipated to generate almost $2.6 billion new revenue for Illinois, based on 2013 vehicle miles traveled rates. Additionally, the report projected revenues through 2030, and 2016 revenues were projected to reach above $3.7 billion (Figure 28). This is a perfect example of another viable revenue source capable of generating the needed transportation funding.

Figure 28: Projected Revenues from Vehicle Miles Traveled Rate Proposal



Source(s): Manzo and Poulos, 2015

PERSONAL COSTS

Illinois drivers will continue to contribute less to necessary transportation system needs if a change is not made to existing funding methods. In order to understand the true cost that transportation fees currently imposed on the average driver, the following section examines the two major types of fees – motor fuel tax and vehicle registration – and compares those costs to other typical bills. In the end, adequately paying for transportation systems upfront will benefit all drivers – both financially and timewise – at a cost less than the typical utility bill.

Vehicle Maintenance Costs

While motorists may believe paying less towards transportation funds benefits them, in actuality, the deteriorating condition of roadways and transit systems result in additional back-end costs. Poorly

maintained transportation systems result in additional personal vehicle maintenance costs, wasted time due to congestion, and potential safety risks to the average driver.

Specifically, added stress from poorly maintained roadways increases the likelihood of repairs and depreciates the value of vehicles faster. A 2018 study by TRIP – a national transportation research group – determined the average additional vehicle operating cost due to substandard roads by major metropolitan areas in Illinois. The report used a variety of data sources from AAA and the Highway Development and Management Model, which estimates vehicle operating costs related to pavement conditions. Drivers in Chicago are estimated to pay an additional $627 per year due to the inferior roadway system, while drivers in Rockford can expect to pay an additional $639 (TRIP, 2018).

Cost of Annual Transportation Fees

The two major transportation fees an average driver in Illinois pays are the motor fuel tax (state and federal) and vehicle registration fees. Currently the state gasoline tax is $0.19/gallon and the federal gasoline tax is $0.184/gallon. Figure 29 summarizes these costs and the associated calculation to determine the average annual cost paid by a driver in Illinois.

Figure 29: Annual Transportation Fees Paid by Average Driver in Illinois

	Light Duty Vehicles	
	Short Wheelbase	Long Wheelbase
Miles Driven (2015 U.S. Average)	11,327	11,855
Miles per Gallon (2015 U.S. Average)	23.9	17.3
Gallons per Year	473.9	685.3
Federal Gas Tax Cost ($0.184/gallon)	$87	$126
State Gas Tax Cost ($0.19/gallon)	$90	$130
State Vehicle Registration Fee	$101	$101
Annual Cost	$278	$357

Source(s): FHWA Highway Statistics (miles driven); EIA (miles per gallon); NCSL, 2017 (veh. reg. fee)

In this example, the 2015 United States average of the number of miles driven and miles per gallon were used for two vehicle types. Short wheelbase vehicles include passenger cars, light trucks, vans, and sport utility vehicles with a wheelbase less than 121 inches. Large wheelbase vehicles include those with a wheelbase greater than 121 inches.

At most, an average driver currently pays $360 a year – or approximately $30 a month – in state and federal transportation fees. When compared to other average utilities, this is incredibly low. Figure 30 compares these fees to other typical utilities, including cable, internet, and electricity.

The average annual electricity and cable bills are almost 4 times that of the typical transportation fees. Furthermore, the average person is willing to pay $876 for a phone each year, but only pays around $318 to maintain the transportation system he or she depends on to access work, school, the grocery store, and countless other needs. The transportation system is a public utility that functions similarly to the electricity network or a public water system. Just the same as a person depends on working electricity and water, the public expects a similarly operational transportation system, yet funding is nowhere near equivalent.

Figure 30: Annual Transportation Fees Compared to Average Annual Utility Costs

* Transportation fees are the average of short and long wheelbase numbers from Figure 29
Source(s): Pinnelli, 2017

Increased Transportation Fees

To continue the earlier example of an increased gas tax, the following section illustrates this increase and its impact on an average driver. In the end, significant increases to existing fees will minimally impact each driver.

The average Illinois driver would only pay, at most, an additional $452 per year if the state motor fuel tax was increased to $0.85 per gallon (Figure 31). This $38 a month per driver would contribute an additional $3.3 billion to the state's transportation revenues (Figure 26).

Figure 31: Example of Annual Transportation Fees Paid by Average Driver in Illinois with Increased Gas Tax

	Light Duty Vehicles	
	Short Wheelbase	Long Wheelbase
Miles Driven (2015 U.S. Average)	11,327	11,855
Miles per Gallon (2015 U.S. Average)	23.9	17.3
Gallons per Year	473.9	685.3
Federal Gas Tax Cost ($0.184/gallon)	$87	$126
State Gas Tax Cost ($0.85/gallon)	$403	$582
State Vehicle Registration Fee	$101	$101
Annual Cost	$591	$810
Difference to Existing Rate	$313	$452

Source(s): FHWA Highway Statistics (miles driven); EIA (miles per gallon); NCSL, 2017 (veh. reg. fee)

When again compared to other typical utilities, this increase would still put transportation fees as one of the cheapest utilities. Totaling at most $810, it would only exceed the average annual cost of an internet bill. Cable and electricity would still be 1.5 times that of transportation fees.

CONCLUSION

Illinois has a great deal of work to do to bring its transportation networks up to a quality standard. As this report has summarized, the state has already reached a point where 20% of Illinois roadways are in "poor" condition and 8% of bridges are considered "backlogged." If changes are not made soon, it is alarming to imagine the future condition of the state's transportation network. Economic competitiveness depends on a quality transportation network. State policymakers would do well to remember that when considering the future ramifications of inadequate transportation funding.

Illinoisans have gotten used to pothole filled roads, narrow bridges, significant congestion, and delayed trains, but it's time to make these experiences a rarity, instead of the norm. The state's transportation network is too important to allow continual avoidance. It is time for lawmakers to seriously discuss viable funding options to address these severe shortfalls so that all current and future Illinoisans can count on a dependable and efficient transportation network that serves their needs.

REFERENCES

Bureau of Transportation Statistics (BTS). (2015). *State Transportation Statistics*.

Bureau of Transportation Statistics (BTS). (2017). *FAF⁴ Summary Statistics*. Freight Analysis Framework Version 4.

Chicago Metropolitan Agency for Planning (CMAP). (2017). *ON TO 2050 Preview Report*.

Department of Transportation (DOT). (2017). *Transportation Infrastructure Finance and Innovation Act (TIFIA): Overview*.

Energy Information Administration (EIA). (2017). *Motor Vehicle Mileage, Fuel Consumption, and Fuel Economy*.

Federal Highway Administration (FHWA). (2011). *Bridge Preservation Guide*.

Federal Highway Administration (FHWA). (2016). *Highway Statistics Series*.

Illinois Commerce Commission (ICC). (2017). *Crossing Safety Improvement Program: FY 2018-2022 Plan*.

Illinois Department of Transportation (IDOT). (2014). *FY 2015-2020 Proposed Highway Improvement Program*.

Illinois Department of Transportation (IDOT). (2015). *FY 2016-2021 Proposed Highway Improvement Program*.

Illinois Department of Transportation (IDOT). (2016). *FY 2017-2022 Proposed Multi-Modal Transportation Plan*.

Illinois Department of Transportation (IDOT). (2017a). *Illinois Travel Statistics*.

Illinois Department of Transportation (IDOT). (2017b). *Illinois Department of Transportation Freight Plan*.

Illinois Department of Transportation (IDOT). (2017c). *Illinois Strategic Highway Safety Plan 2017*.

Illinois Department of Transportation (IDOT). (2017d). *FY 2018-2023 Proposed Highway Improvement Program*.

Illinois Department of Transportation (IDOT). (2017e). *Condition Rating Survey Summary Report*.

Illinois Department of Transportation (IDOT). (2017f). *Motor Fuel Tax Funds: Source, Distribution & Uses for County.*

Illinois Public Transportation Association (IPTA). (2017). *Downstate Transit Needs Presentation*.

Manzo, Frank and Marc Poulos. (2015). *The I-RIDE Proposal: A Smart, Reliable Policy to Fund Transportation Infrastructure*.

National Conference of State Legislatures (NCSL). (2017). *Vehicle Registration Fees by State*.

Pinnelli, Kim. (2017). *Average Utility Bills Will Shock You*. CreditDonkey.

Regional Transportation Authority (RTA). (2016). *Capital Asset Condition 2016: Year 5 Assessment.*

Regional Transportation Authority (RTA). (2017a). *Capital Investment Needs of the RTA Region: Bridge the Gap*.

Regional Transportation Authority (RTA). (2017b). *Invest in Transit: The 2018-2023 Regional Transit Strategic Plan for Chicago and Northeastern Illinois*.

Texas A&M Transportation Institute (TTI). (2015). *2015 Urban Mobility Scorecard: Congestion Data for Your City*.

The White House. (2018). *Legislative Outline for Rebuilding Infrastructure in America*.

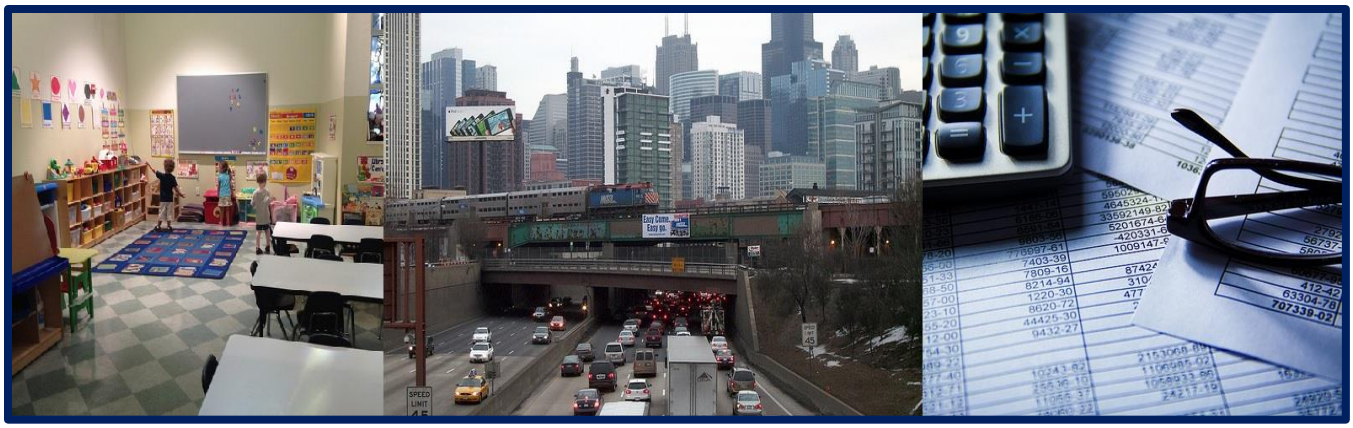
TRIP. (2018). *Illinois Transportation by the Numbers: Meeting the State's Need for Safe, Smooth and Efficient Mobility.*

U.S. Census Bureau. (2016). *American Fact Finder*.

COVER PHOTO CREDITS

Souffle, Anthony. (2016). "Deficit-Laden Illinois' Infrastructure is Crumbling." *Chicago Tribune*.

POLICIES THAT SUPPORT EMPLOYMENT



Investments in Public Education, Investments in Public Infrastructure, and a Balanced State Budget

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Executive Summary

Governments utilize policies to impact the efficiency of labor markets. These policies are designed to increase employment by encouraging people to look for work, make it easier for people to get to work, provide support for people who are working, create opportunities for employment, and help people become qualified to work. This report, conducted by researchers at the Illinois Economic Policy Institute and the Project for Middle Class Renewal at the University of Illinois at Urbana-Champaign, is a national investigation into an assortment of labor market and economic policies that support employment and should be fully implemented in Illinois.

There are four public policies that *directly* support employment:

1. **Improving the share of the population with a bachelor's degree** increases a state's human capital, productivity, and technological and innovative capacities. A one percentage-point increase in the share of the population with a bachelor's degree is statistically associated with a 0.80 percentage-point increase in the employment rate.
2. **Increasing the number of three and four year olds in state early childhood education programs** improves outcomes for children later in life and supports employment because parents, particularly mothers, re-enter the workforce instead of staying at home with their kids. A one percentage-point increase in the share of three and four year old children enrolled in state early childhood education programs also has a statistically significant impact, increasing the working-age employment rate by 0.07 percentage point.
3. **Improving and expanding roads, bridges, highways, subways, railroads, and waterways** all provide direct jobs to construction workers over the short term and allows businesses to efficiently bring their product to market in the long run. As a result, a one percentage-point increase in the highway share of state expenditures is statistically associated with a 0.39 percentage-point increase in the working-age employment rate.
4. **Reducing the average travel time commuting to work** increases worker-to-firm connectivity and improves economic output by providing individuals with more time to engage in productive activities rather than sitting idle in congested traffic. A 20-minute drop in mean travel time to work would increase the working-age employment rate by 0.09 percentage point.

In addition, there is one government practice that *indirectly* supports employment:

5. **Higher budget surpluses in state government** improve investor confidence in states and ensure that funds are available during recessions and other economic downturns. A one percentage-point increase in the state's budget surplus over total revenue is associated with a 0.20 percentage-point increase in the working-age employment rate.

Seven variables have *suggestive* direct impacts on the working-age employment rate. More health insurance coverage for workers, more pension coverage for workers, and more child care workers may all positively affect the working-age employment rate, but there is not enough evidence to draw a confident conclusion. A higher minimum wage, a higher personal income tax rate, a higher amount of corporate subsidies, and a higher violent crime rate may all negatively affect the working-age employment rate, though again there is not enough evidence to draw a confident conclusion.

There are nine additional policies and factors examined that have no apparent direct impact on the working-age employment rate. Among these are "right-to-work" policies and the state-level unionization rate. Contrary to political rhetoric, a higher union density does not reduce employment and related policies to limit the power of labor unions have no discernible impact on the working-age employment rate. A higher number of unemployment insurance weeks also has no impact on the employment rate. Small or modest increases in state sales taxes and corporate income taxes all also have no direct statistical impact on the employment rate. However, tax revenues do enhance the capacity to produce spending on the five major areas that were found to strongly support employment.

A data-driven policy proposal for the State of Illinois is subsequently presented. If the state's flat personal income tax rate is retroactively increased from 3.75 percent to 4.75 percent, the state would generate $3.5 billion in additional tax revenue. The proposal calls for dedicating this new $3.5 billion only to five government expenditures. First, $375,000,000 is to be spent on

grants for public higher education to reduce the cost of attending public universities. Second, $375,000,000 is to be spent on the construction of new highway, road, and bridge infrastructure. Third, $375,000,000 is to be spent on mass transit systems to reduce commute times to work, particularly in the Chicago metropolitan area. Fourth, $375,000,000 is to be spent doubling the number of children enrolled in state early childhood education programs. Fifth, $2,000,000,000 is to be used to reduce the deficit and meet the required income tax revenues needed to implement the budget offered by the nonpartisan, nonprofit Civic Federation (2015). Note that the Civic Federation's proposal includes other revenue-increasing and cost-cutting measures that close the rest of the state budget. While not a labor market policy, decisions to raise the necessary revenue to balance or create state budget surpluses are strongly correlated with an increase in the employment rate.

These public policy changes would boost employment. The working-age employment rate would increase by up to 2.4 percentage points in Illinois, amounting to nearly 180,000 new jobs supported. The policy changes would also add at least $2 billion on net to the Illinois economy, even after accounting for higher income taxes paid. The benefits significantly outweigh the costs.

The public policies that "work" for workers are all *investments* using taxpayer dollars. Government investments in transportation infrastructure, in the education of residents of all ages, and in future public expenditures all support employment. Other policy changes, such as curtailing union membership or lowering the minimum wage, do not increase the employment rate in any way. The State of Illinois should take steps to increase investment in public education, increase investment in public infrastructure, and balance the state budget.

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About the Authors

Frank Manzo IV, MPP is the Policy Director of the Illinois Economic Policy Institute (ILEPI). He earned a Master of Public Policy from the University of Chicago Harris School of Public Policy, a Bachelor of Arts in Economics and Political Science from the University of Illinois at Urbana-Champaign, and an Advanced Certificate of Labor Studies from the University of Illinois. He specializes in labor market analysis, economic development, infrastructure investment, the low-wage labor force, and public finance. He can be contacted at fmanzo@illinoisepi.org.

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Section 1: Background Information

Introduction

Governments utilize policies to impact the efficiency of labor markets. These policies are designed to increase employment by encouraging people to look for work, make it easier for people to get to work, provide supports for people who are working, create opportunities for employment, and help people become qualified to work. For example, policymakers have long recognized child care as a key ingredient in parents' employment decisions (Gennetian et al., 2004). The welfare reform legislation of the 1990s created a host of sanctions for noncompliance with work requirements and were found to triple the risk of "disconnecting" women from employment (Moore et al., 2012). Other studies have documented that institutional arrangements (i.e., employment supports) mediate the costs to women's part-time and intermittent employment and that "employment continuity" is highest among countries in which the state provides support for working mothers (Stier et al., 2001). Moreover, studies on incarceration laws indicate that the United States made a large and coercive intervention into the labor market through the expansion of the penal system (Western & Beckett, 1999).

Research has also demonstrated the labor market policies such as unemployment benefits, job security legislation, and payroll taxes are often complementary in that the effect of each policy is greater when implemented in conjunction with the other policies than in isolation (Coe & Snower, 1997). Scholars have provided a broader critique of labor markets by pointing out that many jobs lack the elements to sustain long-term viable employment and that job quality is becoming more unequal in the United States (Kalleberg et al., 2000). On the other hand, international studies have found that the implementation of active labor market policies has a positive effect on employment rates (Estevão, 2007). Scholars have also documented the major judicial decisions and legislative initiatives that shape the growth of various types of maternity leave policies (Trzcinski & Alpert, 1994).

Extensive historical analysis has persuasively argued that the idea of full employment has been continually thwarted by labor market policy in the United States (Weir, 1992). Investigations as to why full employment has been erased as a major political issue in the United States have also been conducted (Weir, 1987). Other research has examined the need for school-to-work programs or other means of increasing early job market stability (Neumark, 2002). Furthermore, studying policies that are created and enforced at the state level are appropriate because "subnational industrial policies" to create jobs and economic growth have dramatically expanded (Jenkins, Leicht, and Wendt, 2006).

This report, conducted by researchers at the Illinois Economic Policy Institute and the Project for Middle Class Renewal at the University of Illinois at Urbana-Champaign, is a national investigation of some of the standard labor market and economic policies that support employment. The findings indicate that four specific policies should be fully implemented in Illinois while maintaining a balanced budget. The report investigates public policies and economic phenomena across 24 different variables. Section 1 provides background information on the employment rate, including a review of economic research, how the data were collected, and limitations to the analysis. Section 2 evaluates how strongly each policy or economic variable correlates to a higher employment rate, without controlling for other factors. Section 3 subsequently analyzes the unique and independent effect that each variable has on employment, ultimately concluding that five public policies and practices actually make a difference. With this knowledge, Section 4 presents a data-driven $3.5 billion policy proposal to support employment in the State of Illinois. Finally, Section 5 concludes by offering implications and recapping key findings.

Explanation of the Employment Rate

The official unemployment rate is the number of unemployed residents as a percent of the civilian labor force. The civilian labor force is defined as the number of employed persons plus those who do not have a job but want and are looking for one. The unemployment rate is thus ascertained by dividing the unemployed by both the employed and the unemployed. The rate excludes persons who are below age 16, incarcerated criminals, and all personnel on active military duty.

The Bureau of Labor Statistics (BLS) from the U.S. Department of Labor publishes five measures of "labor underutilization" in addition to the official unemployment rate. The BLS also has rates based on duration of unemployment (15 weeks or longer), job losers and workers with temporary jobs, and discouraged workers who have stopped looking for a job. The fifth and six measures include "persons marginally attached to the labor force," who are neither working nor looking for work but indicate

that they want and are available for a job and have looked for work at some point in the past 12 months. The sixth measure, simply called U-6, includes underemployed workers and is the most comprehensive unemployment rate (BLS, 2015).

It is important to note that the unemployment rate is not the only, or even the best, indicator of a state's labor market performance. Economists often prefer the *employment rate*, which is simply the number of residents in an area that have at least one job divided by the total population.[1] Consider two economies with 100 residents: State A and State B. State A has 50 civilians in the labor force – 45 workers and 5 jobless who are looking for a job. State B has 25 in the civilian labor force – 24 workers and 1 jobless who is looking for a job. State A's unemployment rate is 10 percent and its employment rate is 45 percent.[2] State B's unemployment rate is 4 percent and its employment rate is 24 percent.[3] Which economy is stronger? Although State B's economy has a lower unemployment rate, it also has an inferior employment rate because 76 percent of people are not working or trying to work. All else equal, State A has a healthier economy despite a higher unemployment rate.

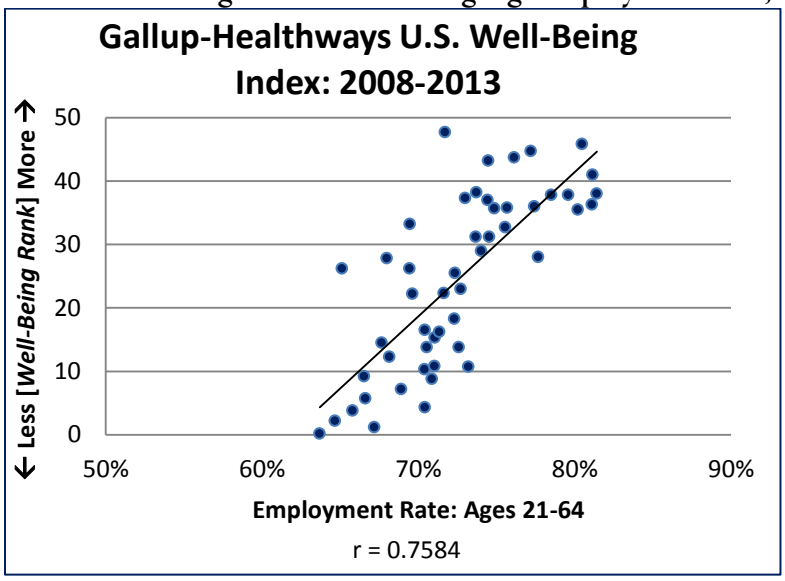
Regardless of whether able-bodied residents are unemployed and looking for work or are out of the labor force and do not want jobs, nonworking individuals all rely on the productive output of the employed. For example, the unemployed rely on tax revenues generated by workers through unemployment insurance to maintain an acceptable quality of life while they search for new jobs. The intended aim of many government programs is also to induce employment growth, and unemployed persons benefit if tax dollars are effectively spent in ways that stimulate the economy. On the other hand, individuals who are out of the labor force because they are not looking for work also rely on support from workers. A stay-at-home parent relies on the steady income of his or her partner to care for their family. Retirees rely on a high level of employment so that current workers generate enough tax revenues to fund their retirement income. Regardless of their reason for not working, U.S. residents who do not have a job still need food, water, shelter, clean air, and security. A higher employment rate generally increases economic output, raises tax revenues, and improves the quality of life for all individuals in an area.

Gallup and Healthways have interviewed more than 175,000 adults across all 50 states every year since 2008 to calculate a state-level "Well-Being Index." The index is based upon five factors of satisfaction: sense of purpose, social relationships, financial security, connection to community, and physical health. Figure 1 depicts the relationship between 2013 working-age employment rates and the average state rankings from 2008 through 2013 (i.e., all years for which the index had been calculated to that point), as reported by Gallup-Healthways (2014). A rank of 49 would be the "best" possible ranking, representing a state that had the highest reported well-being in every year of the survey. The closest score to this level of well-being is the 47.7 average for Hawaii. A rank of 0 is "worst" and would represent a state that had the lowest reported well-being in all years. West Virginia placed last in five of the six years, receiving a score of 0.2. Illinois ranked 22.3 on average from 2008 through 2013, in the bottom half of all states but near the median (Figure 1).

Higher working-age employment rates are strongly correlated with greater well-being in states (Figure 1). In general, as the state-level employment rate of workers ages 21 through 64 increases, the corresponding state-level well-being ranking increases. The correlation between the two measures is a strong 75.8 percent. Employment can have positive impacts on an individual's sense of purpose and financial security, as well as on their physical health if their compensation includes employer-provided health insurance. Valuable relationships with coworkers, colleagues, and local organizations may also improve the well-being index through the social and community elements. Thus, while the working-age employment rate is only one economic metric, results from Figure 1 reveal that policies which support a higher employment rate are likely to have positive impacts on personal happiness and societal well-being.

[1] The employment rate is also sometimes called the "employment ratio," the "employment-to-population ratio," or the "employment share."
[2] Unemployment rate = U/(E+U) = 5/(45+5) = 0.10; Employment rate = E/P = 45/100 = 0.45
[3] Unemployment rate = U/(E+U) = 1/(24+1) = 0.04; Employment rate = E/P = 24/100 = 0.24

FIGURE 1: Well-Being Rank and Working-Age Employment Rate, 2013



Sources: CEPR, 2014; Gallup-Healthways, 2014.

Review of Country-Level Economic Research

The Organization for Economic Cooperation and Development (OECD)– which includes the United States and 33 other developed economies committed to democracy, economic progress, and world trade– has provided "General Policies to Improve Employment Opportunities for All" (OECD, 2006). Reflecting on experiences from 1994 through 2004, the OECD paper draws conclusions for advanced market economies. The following are some of the OECD's lessons for policymakers and lawmakers:

- Overly generous unemployment benefit systems have the potential to create large labor supply distortions;
- An appropriate mix of properly designed active labor market programs can reduce unemployment by improving the efficiency of the job-matching process and by enhancing the skills of those who take part in them;
- Reforms should be considered where collective bargaining practices result in downward real wage rigidities or too little differentiation of relative wages by skill, region or other dimensions;
- A moderate minimum wage generally is not a problem, but adequate allowance for a sub-minimum wage for young workers is essential;
- The main constraint for the overall tax on labor earnings is to maintain budget balance;
- Employment protection legislation– which increases job security for workers but can create a barrier to hiring for employers– that is too strict can reduce labor turnover below an optimal level, disadvantaging youth and women;
- Governments can play an active role in promoting "family-friendly" employment policies by facilitating access to child care and parental leave; and
- Human capital investments for achieving strong economic growth and mitigating poverty and inequality should be demand-driven and include government co-financing.

Thus, the OECD largely concludes that employment is supported by some level of active labor market intervention to increase worker skills and education, a moderate minimum wage, balanced government budgets, and access to child care and parental leave. The OECD generally contends that high unemployment insurance, high union density, and high protections to increase job security all have negative impacts on employment.

Kamilia Fialová (2011) from Charles University in Prague has studied the effect of labor market institutions on the employment rates of OECD and European Union countries. Fialová finds that employment protection legislation significantly reduces the employment rate. High labor taxes also lower the employment rate, though the effect is relatively small. On the other hand, active labor market programs, labor unions, and the unemployment benefit replacement rate (i.e., the ratio of unemployment benefits received as a percentage of previous earnings) have *stimulating* effects and increase the employment

rate. There is also no definitive evidence that a higher minimum wage has any impact on a country's employment rate. These findings tend to align with the OECD lessons that active interventions to increase worker skills and education, a moderate minimum wage, and access to child care and parental leave all support employment while high protections to increase job security have negative impacts. On the other hand, Fialová's analysis calls OECD's cautionary conclusions on high union density, high unemployment insurance, and taxes to balance the budget into question (Fialová, 2011).

Henrik Jacobsen Kleven (2014) from the London School of Economics has found that, contrary to economic theory, countries with high taxes and generous welfare systems tend have higher employment rates among individuals ages 20 through 59. Kleven finds that a person may be more likely to work when his or her country provides public services that make working easier, "including child care, elderly care, and transportation." In effect, these policies are subsidies that reduce the costs of market work, encouraging labor supply and mitigating the negative impacts of higher taxes. Scandinavian countries, in particular, impose high taxes and provide significant public services, "and yet those countries feature very high employment" (Kleven, 2014). M. Christian Lehmann (2004) of the University of Brasilia also finds that large cash transfers to low-income individuals have a stimulating effect on labor supply (Lehmann, 2014).

The studies by Fialová, Kleven, and Lehmann imply that economic research should consider the *benefits* of spending on public services in addition to the *costs* of higher taxation. The suggestion to investigate policy benefits is echoed by Sören Blomquist, Vidar Christiansen, and Luca Micheletto (2009), respectively of Uppsala University, the University of Oslo, and the University of Milan. The authors study the examples of child care, elderly care, primary education, and health care and conclude that "there is a potential gain in efficiency where public provision of such services replaces market purchases." After factoring in public expenditures, economies with higher tax rates can have less severe distortions than those with lower tax rates. This helps explain, in part, why a paper by Emmanuel Saez of the University of California, Berkeley, Joel Slemrod of the University of Michigan, and Seth Giertz of the University of Nebraska (2010) finds that the optimal *top* federal income tax rate is 68.4 percent in America, substantially higher than the current 39.6 percent (Saez et al., 2010).

Country-level evaluations therefore generally find that active labor market policies such as employment subsidies and apprenticeship programs, access to child care and elderly care, access to cheap and efficient transportation, and public provision of educational services all support employment. A moderate minimum wage and moderate tax burden appear to have no significant impact on the employment rate. Labor unions and unemployment benefits have mixed impacts, while significant protections to increase job security have shown some negative effects on the employment rate. A proactive "flexicurity model," as espoused by Denmark, may thus be the best labor market policy. This way of organizing the labor market allows flexible hiring and firing practices but has significant security measures, including a strong social safety net and active labor market programs to educate workers, support families, and promote high wages (Andersen et al., 2011).

Sections 2 and 3 investigate whether these public policies, as well as other government programs and economic factors, are linked to high working-age employment rates among U.S. states.

Data, Methodology, and Limitations

This report investigates state-level data on the working-age employment rate and its relationship with 23 other variables. The latest year for which data are available for all the variables and the working-age employment rate is 2013.[4] Data are collected from ten public sources:

1. The 2013 *Current Population Survey* Outgoing Rotation Groups from the Bureau of Labor Statistics of the U.S. Department of Labor and the U.S. Census Bureau, as provided by the Center for Economic and Policy Research (CEPR, 2013);
2. The 2013 *American Community Survey* 1-Year Estimates by the U.S. Census Bureau (Census, 2014a);
3. 2013 *Annual Survey of State Government Finances* by the U.S. Census Bureau (Census, 2014b);
4. The 2013 *State Transportation Statistics* by the Bureau of Transportation Statistics of the U.S. Department of Transportation (USDOT, 2015);

[4] For a CSV (Comma Delimited) file with the entire dataset and accompanying source links, contact author Frank Manzo IV at fmanzo@illinoisepi.org.

5. The 2013 Wage and Hour Division of the U.S. Department of Labor (USDOL, 2015);
6. The 2013 "Unemployment Rates and Weeks of Unemployment Insurance (UI) Available" by the Center on Budget and Policy Priorities (CBPP, 2013);
7. *Crime in the United States, 2013* by the Federal Bureau of Investigation (FBI, 2013);
8. *The State of Preschool 2013* by The National Institute for Early Education Research by the Graduate School of Education at Rutgers University (NIEER, 2013);
9. The consolidation of Good Jobs First data by the Mercatus Center at George Mason University in "Ranking Known State Subsidies to Private Businesses" (De Rugy, 2014);
10. *Child Care in America: 2013 Fact Sheets* by Child Care Aware of America (CCA, 2013).

This report primarily uses two methods to understand the relationship of a given public policy or economic phenomenon with the working-age employment rate. First, in Section 2, correlation coefficients are calculated and linear graphs are plotted to identify general associations, uncontrolled for other factors. Correlation coefficients range from -100 percent to +100 percent. A -100 percent correlation indicates that the two variables have a perfectly negative relationship with one another, while a +100 percent correlation implies a perfectly positive relationship. A correlation of 0 percent would mean that the variables have no relationship to one another. The following parameters, in accordance with standards of social science in both Turkmen (2013) and Cohen (1992), are used to determine the "strength" of a relationship between two variables when evaluating correlation coefficients.

- 0.0 to 9.9 percent: No relationship;
- 10.0 to 29.9 percent: Weak relationship;
- 30.0 to 49.9 percent: Moderate relationship;
- 50.0 percent or greater: Strong relationship.

Section 3 uses an ordinary least squares (OLS) regression model to parse out the actual and unique impact of a particular variable on the working-age employment rate. This technique describes "how much" a factor is responsible for increasing or decreasing the employment rate. The model includes 17 educational, transportation, labor market institution, poverty, inequality, tax, and government spending variables.

In both sections, the working-age employment rate is defined as the percentage of the population ages 21 through 64 with a job. These age bounds are used to understand employment for the group of individuals that has had time to complete some college or an associate's degree and has not yet reached the full retirement age to receive supplemental income from the U.S. Social Security Administration (SSA).

There are limitations to this analysis. First, the report focuses on the working-age employment rate, which is only one indicator of labor market performance and societal well-being. Second, the study only investigates data from a single year: 2013. While the analysis can explain current (i.e., *level*) differences in the working-age employment rate between the 50 U.S. states and estimate effects of policy changes, it cannot predict how each variable changes the employment rate over time (i.e., *growth*). For instance, the report can establish whether the number of public road miles has a positive impact on the present employment rate but cannot determine what effect more public road miles would have on employment growth ten years from now. Finally, there are only 50 observations in the analysis: The 50 U.S. states. The small sample size could limit the conclusions that can be drawn from statistical analysis. However, the 50 states afford economists and labor researchers with 50 laboratories in which different combinations of public policies operate. In addition, the sample of 50 U.S. states is larger than the sample of OECD member countries (N= 34) and European Union member countries (N= 28). Since the states are all part of an integrated national economy with a unified federal government, this analysis also implicitly controls for national "fixed effects." As an example, interest rates may differ between the United States, the European Union, and Japan, but studies evaluating OECD countries may not factor in this difference, biasing the results. A 50-state study does not suffer from this potential flaw.

Section 2: Introduction to Variables and Evaluation of Correlation Coefficients

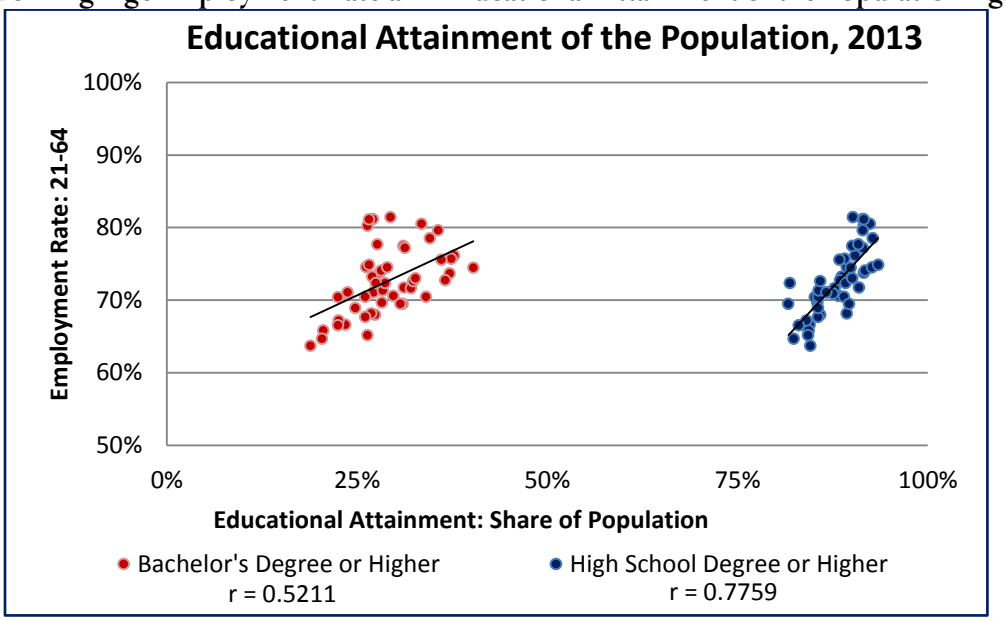
Education and Child Care

Perhaps the most successful function of government in fostering economic development has been to educate the populace. In *American Economic History*, Johnathan Hughes and Louis Cain (2003) of Northwestern University note that the 20th Century was the "human-capital century." In 1910, only about 10 percent of America's youth graduated from high school. Thirty years later, over 50 percent of 18 year olds received a high school diploma. This subsequently "set the stage for the massive increase in college education that took place during the post-World War II years." The returns to education were high, and demand for educated blue-collar workers rose considerably. "It is no coincidence," Hughes and Cain conclude, "that, at the time America began to pull ahead of other countries in terms of income, it also pulled ahead of other countries in terms of education" (Hughes & Cain, 2003).

More recent research corroborates this conclusion. Blomquist, Christiansen, and Micheletto (2009) find that providing public education significantly improves the employment rate. An extra year of education for an individual increases his or her earnings by 7 to 10 percent and an additional year of education on average in the population raises a country's economic growth rate by 1.2 percentage points (Stevens & Weale, 2003; Barro, 1997). Finally, evidence by Noah Berger and Peter Fisher (2013) of the Economic Analysis and Research Network finds that a well-educated workforce raises median wages and builds a foundation for shared economic prosperity within a state.

There is a strong positive relationship between the level of educational attainment and the corresponding working-age employment rate in states across America (Figure 2). As the share of the population with a bachelor's degree or higher increases, the share of the population with a job also increases on average, with a strong correlation of 52.1 percent. Moreover, there is an even stronger correlation (77.6 percent) between the percentage of residents with at least a high school degree or equivalent and the employment rate. As indicated by the data, public policies that support education and improve the number of workers with college degrees are also very likely to improve the employment rate, providing businesses and organizations with the skilled workers they demand.

FIGURE 2: Working-Age Employment Rate and Educational Attainment of the Population Ages 18+, 2013



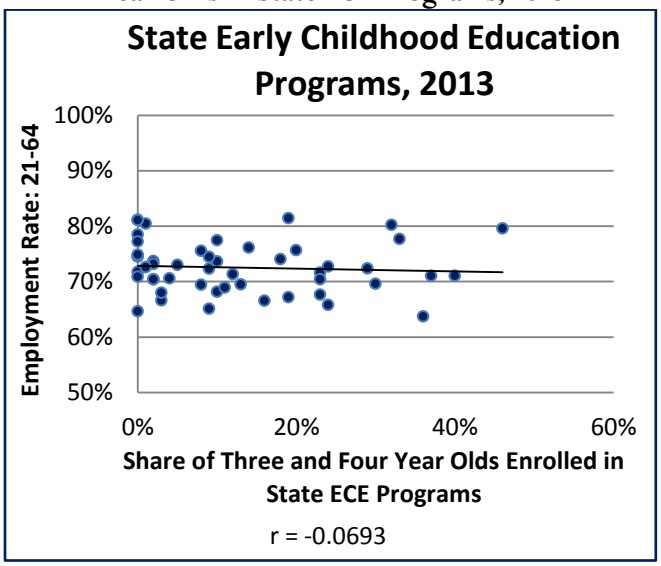
Sources: CEPR, 2014; Census, 2014a.

Economic research demonstrates that early childhood education (ECE) programs have substantial positive benefits over time on both school performance and later labor market outcomes (Calman & Tarr-Whelan, 2005; Kleven, 2014). The significant impact generated by child-care and pre-kindergarten education has led policymakers across the nation to expand these programs. If more three and four year olds are enrolled in state ECE programs, a higher share of their parents might be

expected to enter the labor force and work. However, at first glance, early childhood education seems to have no relationship to the employment rate, with a correlation of -6.9 percent (Figure 3). This lack of relationship is one of the few simple correlations that change considerably in the full economic models in Section 3. Once other factors and public policies are included in the analysis, the effect of state ECE programs on the employment rate is positive and large.

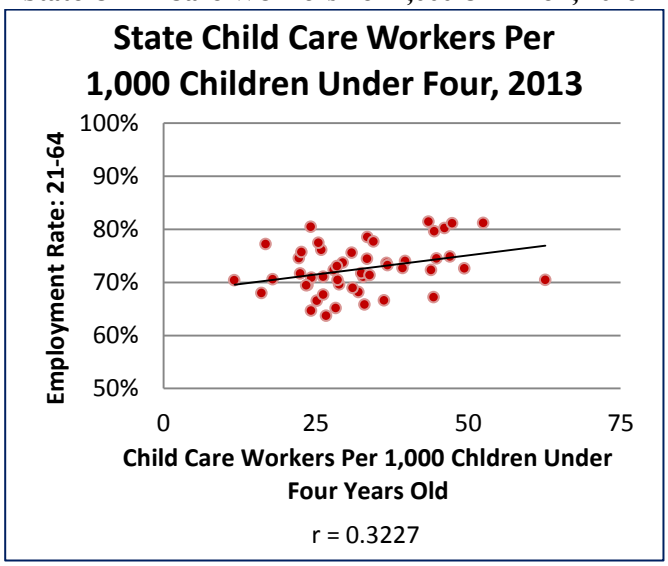
Furthermore, public policy research also finds that publicly-provided child care supports parents entering the workforce (Gennetian et al., 2004; Kleven, 2014). Figure 4 evaluates the association between the number of state child care workers per 1,000 children ages 4 and under and the working-age employment rate. There exists a moderate positive relationship of 32.3 percent. The trend line *suggests* that cutting state child care entirely in Illinois would reduce the working-age employment rate by 0.03 percentage point, amounting to an employment decline of 2,350 workers across the state. This negative impact would be in addition to the 18,870 loss in state child care occupations, and would be particularly harmful to low-income families.

FIGURE 3: Working-Age Employment Rate and 3-4 Year Olds in State ECE Programs, 2013



Sources: CEPR, 2014; NIEER, 2013.

FIGURE 4: Working-Age Employment Rate and State Child Care Workers Per 1,000 Children, 2013



Sources: CEPR, 2014; CAA, 2013.

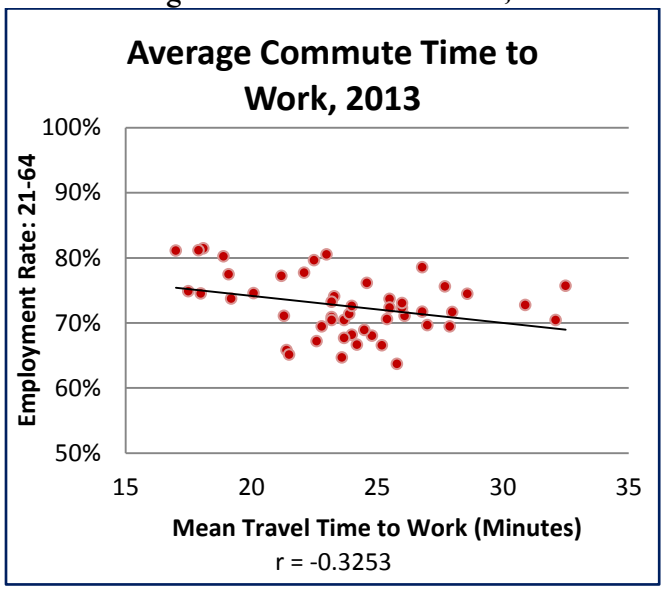
Transportation Funding, Infrastructure, and Utilization

All economic debates that discuss costs are incomplete without also considering benefits. Every action has a cost, even if there is not a defined price attached to it. Going to work, for instance, has many costs: The price of fuel or the fare to use public transit, the wear and tear placed on the worker's vehicle, and even the risk of a transportation-related injury or death. But there are also "opportunity costs" of going to work. The individual could otherwise be learning a new skill, spending time with family, exercising, or sleeping. Despite these costs, people go to work every day, because the monetary and personal fulfillment *benefits* of going to work outweigh the *costs*.

For every potential worker, however, the cost becomes too large at some point. As an extreme example, it would be very unlikely for an individual to accept a job if the commute takes four hours in one direction. The fuel and time costs would simply be too burdensome. This thought experiment, though exaggerated, is important in understanding how investments in transportation infrastructure– especially those which increase worker-to-firm connectivity– are important in supporting employment. When individuals can easily get to a job, they are more likely to enter the labor force.

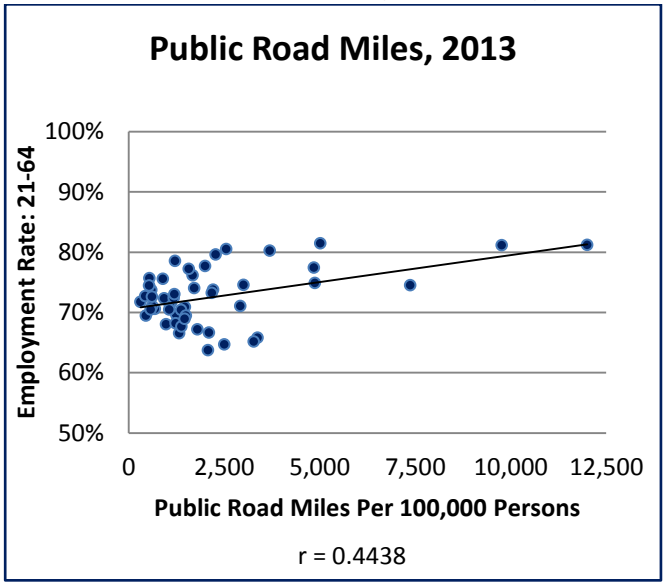
Figures 5 and 6 generally demonstrate this economic phenomenon. Figure 5 depicts the relationship between the average commute time to work reported in the Census Bureau's 2013 *American Community Survey* and the working-age employment rate. There is a moderate negative relationship of -32.5 percent, meaning that longer average commute times are associated with lower employment rates. Additionally, there is a moderate positive relationship (44.4 percent) between the total number of public road miles per 100,000 residents in a state and the employment rate of residents ages 21 to 64 (Figure 6). Increased road availability and decreased congestion tend to support better employment outcomes.

FIGURE 5: Working-Age Employment Rate and Average Commute Time to Work, 2013



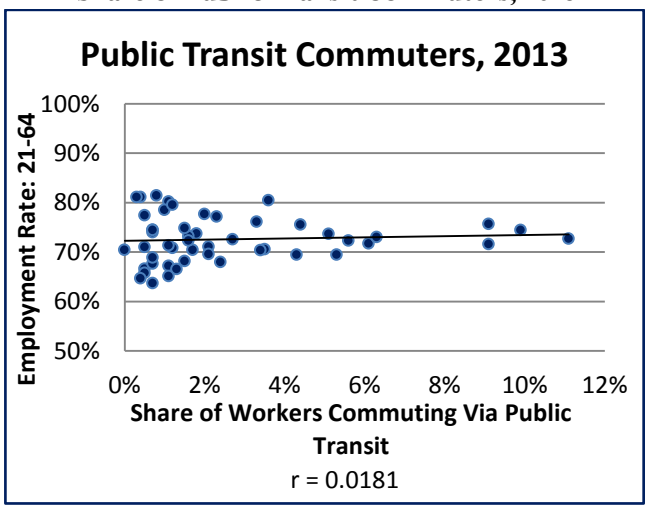
Sources: CEPR, 2014; Census, 2015a.

FIGURE 6: Working-Age Employment Rate and Public Road Miles Per 100,000 Persons, 2013



Sources: CEPR, 2014; USDOT, 2015; Census, 2015a.

FIGURE 7: Working-Age Employment Rate and Share of Public Transit Commuters, 2013



Sources: CEPR, 2014; Census, 2015a

The share of workers using public transportation to commute to their job also appears to have no discernible relationship (1.8 percent), possibly because only a small fraction of American workers use mass transit systems– under 10 percent in every state except New York (Figure 7). Since the share of commuters taking public transit has no negative impact, a possible conclusion is that the *mode* of transportation generally does not matter for the employment rate. It does, however, disproportionately impact low-wage users and an increase in mass transit availability may tend support employment among minimum wage workers.

Information on government spending on, and revenues to fund, transportation infrastructure can be found in the "Taxes and Government Spending" subsection on Page 14.

Labor Market Institutions

Economies are organized around labor market institutions. Governments pass various laws and programs to address perceived socioeconomic problems that arise when the market is unregulated. This is because private markets are not always efficient. As examples, information may not be available to all private actors, monopolies may control a sector, or a market may overprovide or underprovide a good in a manner that is socially suboptimal (called "externalities" in economics). The division of the economic "pie"– the winners and losers of a policy change in the labor market– is also often a consideration for lawmakers. As a result, policies impacting labor market institutions are among the most controversial in whether or not they support employment.

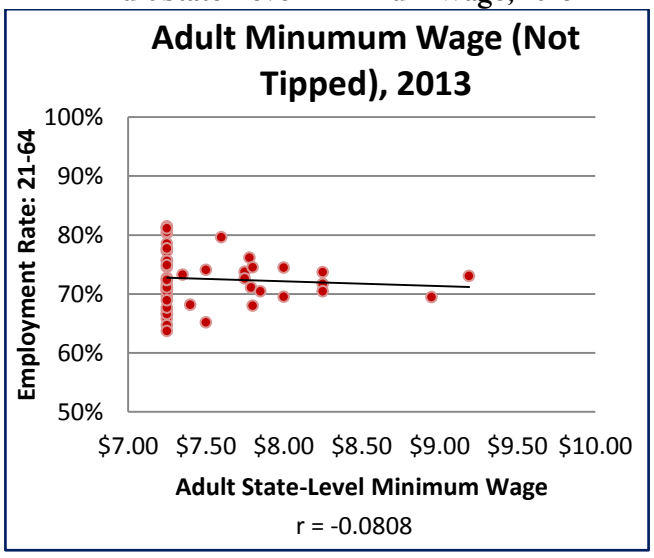
The minimum wage is one of the most contentious labor market institutions. Although 7-in-10 adults nationwide are in favor of raising the minimum wage to $10.10 per hour (PollingReport, 2015), politicians are divided on the issue. The federal minimum wage has remained at $7.25 per hour since 2009. While some argue that the minimum wage is a distortion in the market and increases unemployment, others say the increased wages lead to more spending among low-income families, which stimulates job growth and *offsets* any negative employment effect. Figure 8 tends to support the latter conclusion. With a correlation of just -8.1 percent, a state's adult minimum wage in 2013 had no discernible relationship with its working-age employment rate. There are many explanations for why the minimum wage appears to have little to no effect on total employment (Schmitt, 2013), such as increased demand (Aaronson et al., 2012), reductions in employee turnover and more diligent hiring practices (Dube et al., 2013), and more young workers deciding to stay in school which increases human capital in the long run (Sutch, 2010).

The number of weeks of unemployment insurance provided to workers may also impact employment. Opponents of generous unemployment insurance argue that the longer unemployment benefits last, the less effort unemployed persons will put into looking for a new job. Therefore, states that have higher number of weeks covered by unemployment insurance would tend to have lower employment rates. However, Figure 9 shows a correlation of 14.4 percent, indicating a weak positive relationship between unemployment insurance weeks and the working-age employment rate. It is worth noting, though, that unemployment benefits now run out after 26 weeks in 40 out of 50 U.S. states, a limitation to evaluating the data.

Some commentators and politicians also view labor unions as distorting the labor market and reducing employment opportunities. In fact, there is no relationship between a state's union membership rate and its working-age employment rate, with a correlation of just 0.8 percent (Figure 10). Labor unions form when workers feel that employers have mistreated them, not provided them with enough workplace protections, or unfairly compensated them. Unions collectively bargain on behalf of the workers they represent and agree to contracts with employers that work for both labor and management. By raising worker incomes and increasing personal satisfaction, unions stimulate consumer demand and improve worker morale in ways that often offset disemployment effects.

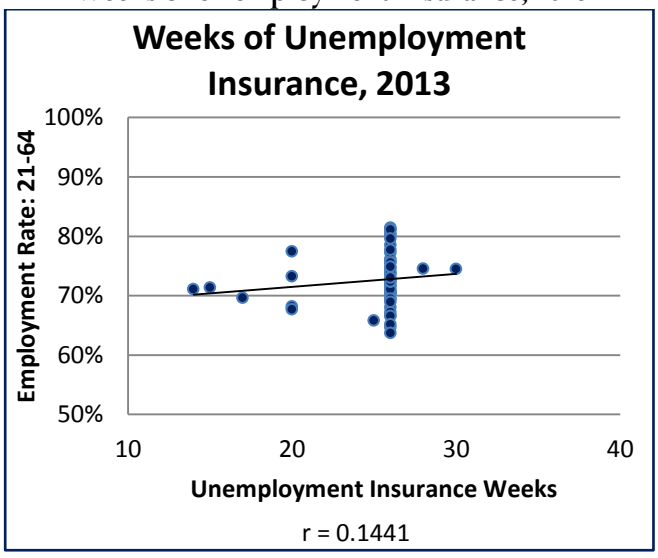
Conversely, "right-to-work" laws impose a government regulation on labor unions, prohibiting them from entering into a specific type of private contract with their employers that includes a "fair-share" clause. "Right-to-work" proponents argue that the regulation helps to encourage business growth and increase job growth by limiting union organizing. However, "right-to-work" laws also have no relationship to the employment rate (Figure 11). While the working-age employment rate is actually marginally higher in collective-bargaining states (71.8 percent) than in "right-to-work" states (71.2 percent), the correlation of 1.4 percent indicates that "right-to-work" does not support employment. This finding echoes much of the economic literature (Manzo & Bruno, 2014; Collins, 2012; Hogler, 2011; Stevans, 2009).

FIGURE 8: Working-Age Employment Rate and Adult State-Level Minimum Wage, 2013



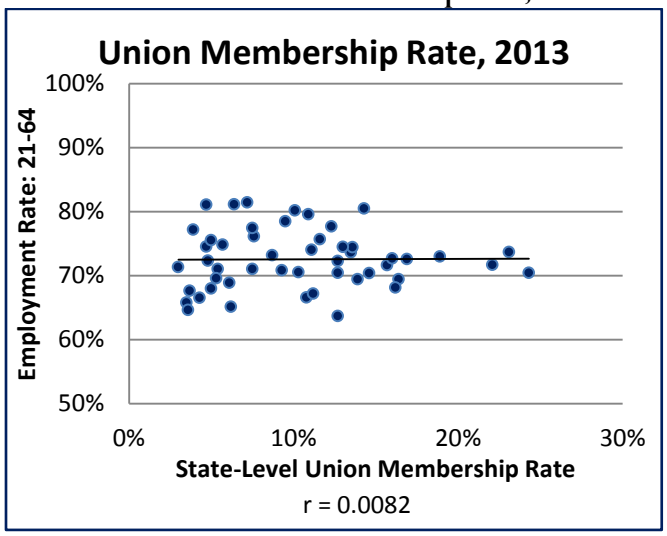
Sources: CEPR, 2014; USDOL, 2015.

FIGURE 9: Working-Age Employment Rate and Weeks of Unemployment Insurance, 2013



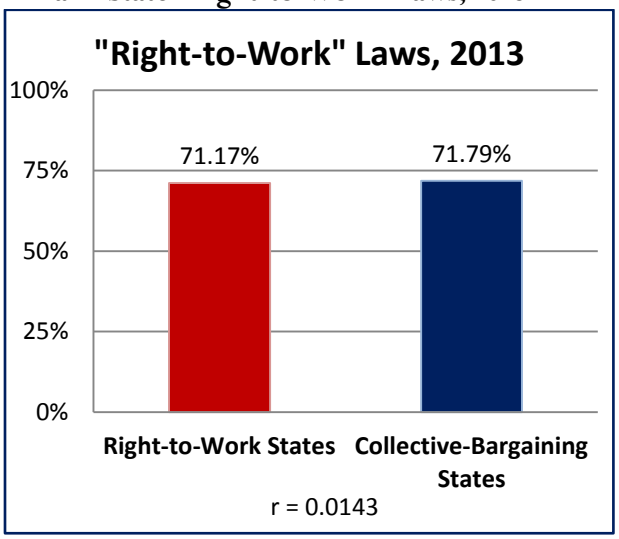
Sources: CEPR, 2014; CBPP, 2013.

FIGURE 10: Working-Age Employment Rate and State-Level Union Membership Rate, 2013



Sources: CEPR, 2014.

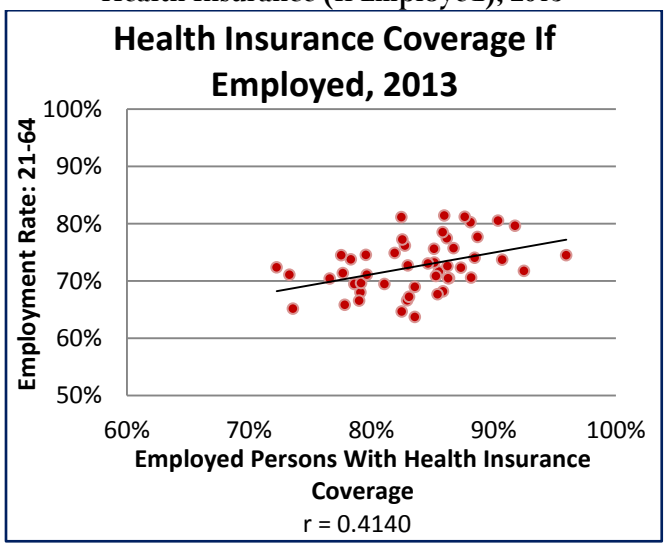
FIGURE 11: Working-Age Employment Rate and State "Right-to-Work" Laws, 2013



Sources: CEPR, 2014.

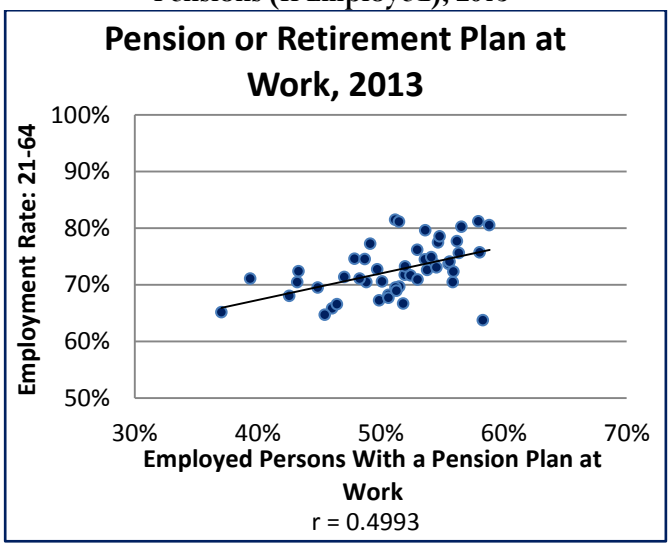
Workers may be encouraged to enter the job market if the jobs offer competitive fringe benefits packages. Health insurance coverage and retirement coverage both increase the benefits of working relative to the costs of going to work. Indeed, in 2013, both the share of employees with health insurance coverage and the share of employees with a pension or retirement plan at work are associated with higher employment rates. Given that workers are more likely to have health and retirement insurance than non-workers simply by having a job, Figures 12 and 13 only report coverage shares *among the employed*. This is done to ensure that the coverage rate (the X-axis) is not explained by the employment rate (the Y-axis). Rather, a non-worker may be encouraged to find a job in a state if he or she is more likely to receive health insurance coverage and retirement coverage once he or she is employed, relative to other states. There is a moderate positive relationship between employee health insurance coverage and the employment rate, with a correlation of 41.4 percent (Figure 12). Similarly, with a correlation of 49.9 percent, there is a moderate positive relationship between the share of employees having a pension or retirement plan at their work and the employment rate (Figure 13). These graphs indicate that higher coverage rates in health and retirement plans may support employment.

FIGURE 12: Working-Age Employment Rate and Health Insurance (If Employed), 2013



Sources: CEPR, 2014; Census, 2014a.

FIGURE 13: Working-Age Employment Rate and Pensions (If Employed), 2013

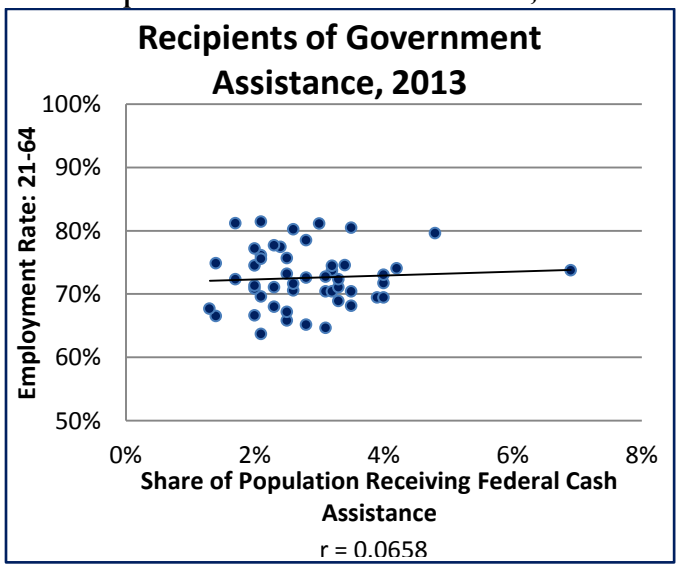


Sources: CEPR, 2014; Census, 2014a.

Poverty, Inequality, and Crime

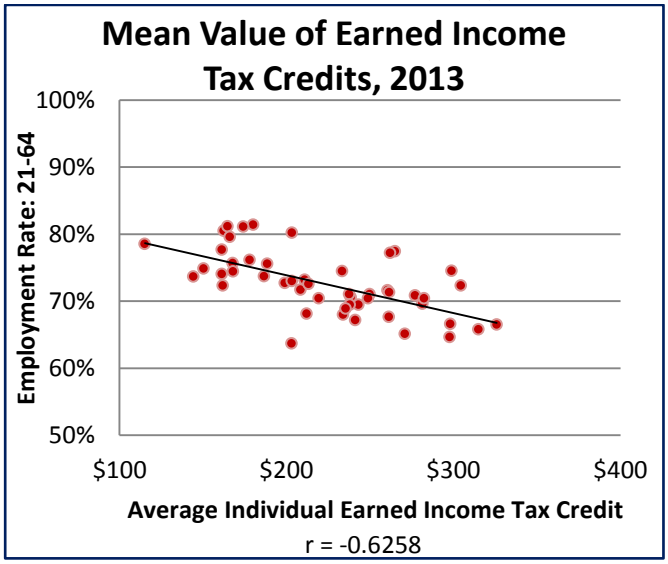
Some commentators and politicians argue that government assistance programs reduce employment because recipients are less likely to seek and accept gainful employment. On the other hand, programs such as the Earned Income Tax Credit (EITC) are designed to increase tax refunds to (or otherwise reduce income taxes paid by) low-wage workers, which theoretically encourages individuals to find a job. The correlations show that the working-age employment rate has no relationship with the share of the population receiving federal cash assistance in Figure 14 (6.6 percent correlation), a strong negative relationship with the average EITC value received by an individual (-62.6 percent correlation) in Figure 15 and a strong negative relationship with the share of the population receiving food stamps (-67.1 percent correlation) in Figure 16. However, these correlations are more likely related to the percent of the population below the poverty line. That is, food stamp and EITC assistance do not lower the employment rate; rather, they are policy responses to a higher share of the population below the poverty line *due* to a lower employment rate. This conclusion is supported in the Section 3 analysis, in which neither food stamps nor EITC value has a statistical impact on the working age employment rate.

FIGURE 14: Working-Age Employment Rate and Recipients of Federal Cash Assistance, 2013



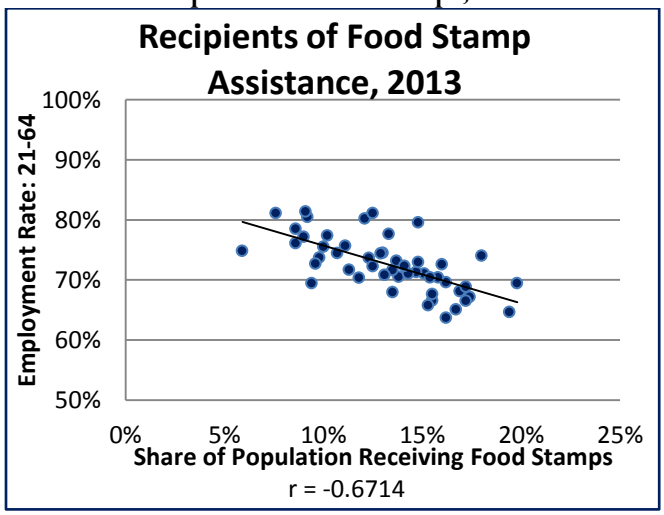
Sources: CEPR, 2014; Census, 2014a.

FIGURE 15: Working-Age Employment Rate and Mean Value of EITC Assistance, 2013



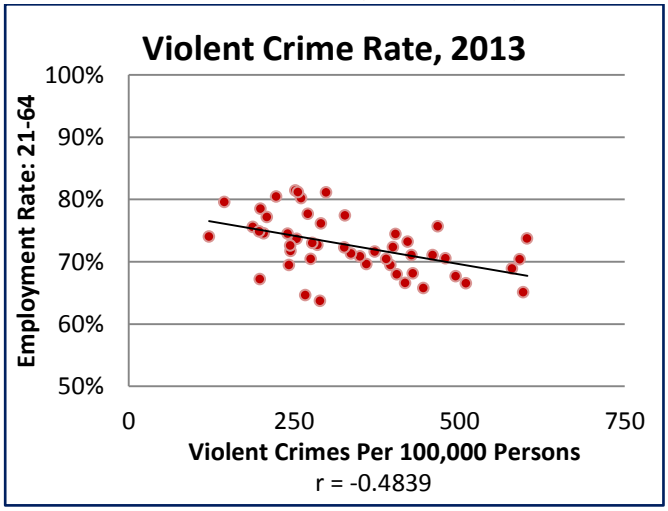
Sources: CEPR, 2014; Census, 2014a.

FIGURE 16: Working-Age Employment Rate and Recipients of Food Stamps, 2013



Sources: CEPR, 2014; Census, 2014a.

FIGURE 17: Working-Age Employment Rate and Violent Crimes Per 100,000 Persons, 2013



Sources: CEPR, 2014; FBI, 2013.

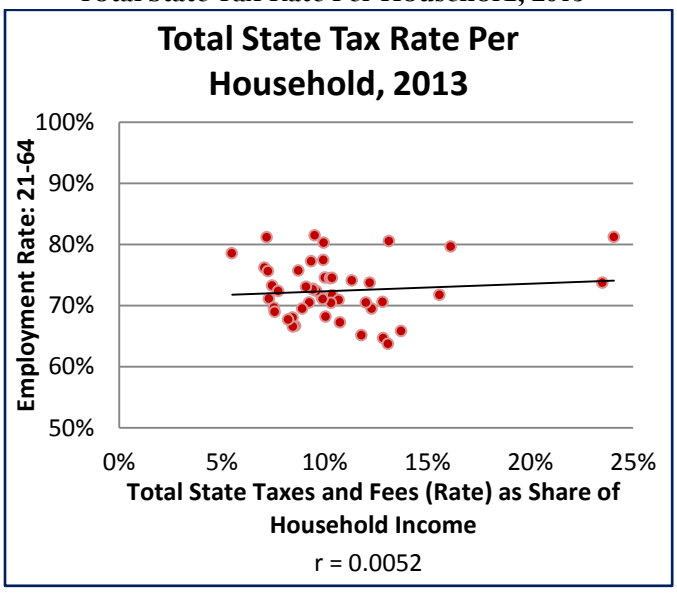
An additional factor that influences employment, which is subject to policy prescription, is a jurisdiction's crime rate. Levitt (2004) provides compelling evidence that increases in the number of police and increases in the prison population are two of the four factors explaining the significant reduction in the crime rate in the 1990s. But does reducing the crime rate have a positive impact on the employment rate? Yes, according to Figure 17. There is a strong negative correlation of -48.4 percent between the number of violent crimes per 100,000 persons in a state and the working-age employment rate (Figure 17). As the violent crime rate increases, the employment rate declines. This relationship, however, may depend on many factors. For instance, if the number of inmates is relatively larger in states with low violent crime rates, they are not counted in the total state population. By removing the inmates from the denominator (individuals who are not currently employed and, even if they were released, are less likely to have a job), the working-age employment rate would be artificially inflated. But reducing criminal behavior is is just one side of the equation. Policies that provide previously incarcerated individuals with job training and placement counseling as well as those that remove the stigma of an arrest record may help increase employment rates among this population.

Taxes and Government Spending

Finally, this report considers the relationship of various taxes and government expenditures on the working-age employment rate. The information utilized is from the 2013 *Annual Survey of State Government Finances* by the U.S. Census Bureau. The data contain details on state government revenue by source, expenditures by function, indebtedness by term, and assets by purpose. This is a voluntary survey, but all 50 state governments participated in 2013 (Census, 2015b).

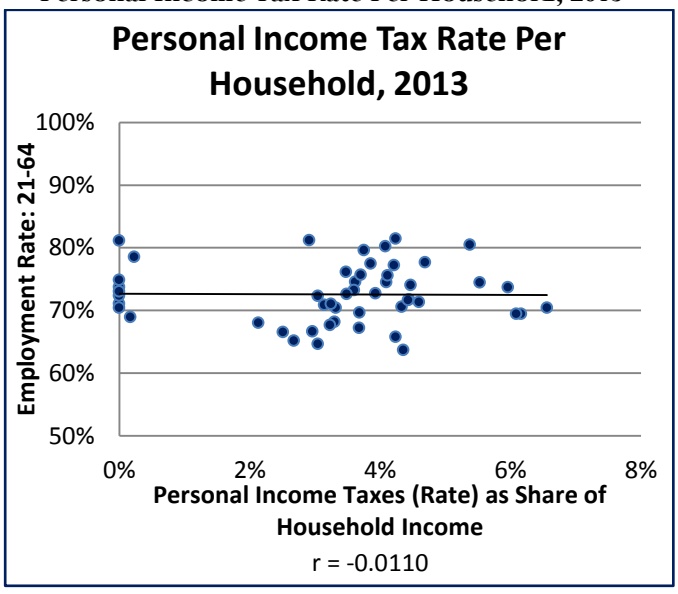
Figure 18 first presents data on the total state tax rate per household. To determine the tax rate per household we first established the state's total collection of tax and fee revenues (for all purposes) and then divided by the number of households reported in each state by the 2013 *American Community Survey*. Then, the average household tax burden is divided by the mean household income reported in the 2013 *American Community Survey* to generate a state-level estimate of total tax rate per household. We found that there is no relationship at all between a state's total tax rate per household and its working-age employment rate (Figure 18). Note that the two outliers in the visual depiction are North Dakota (24.1 percent) and Alaska (23.5 percent), which received disproportionately large corporate net income taxes from energy production companies.The correlation of -0.5 percent is the weakest association of all 35 relationships presented in this paper. As the share of household income paid in total state taxes increases, the employment rate does not go up or down.

FIGURE 18: Working-Age Employment Rate and Total State Tax Rate Per Household, 2013



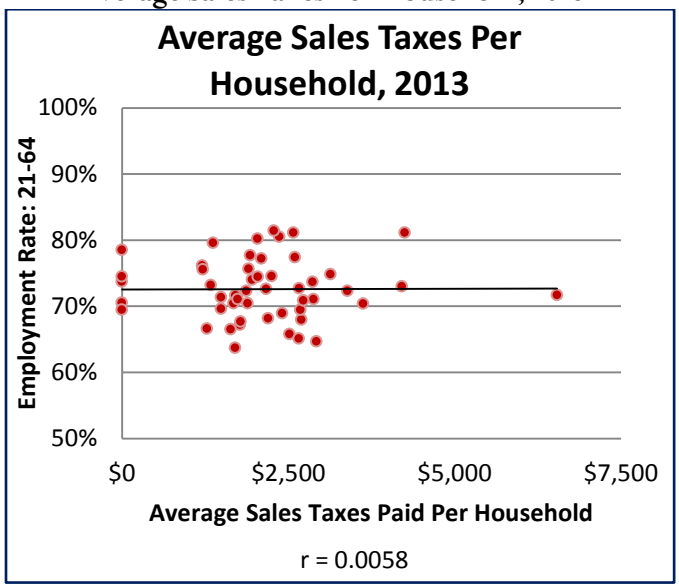
Sources: CEPR, 2014; Census, 2015b; Census, 2015a.

FIGURE 19: Working-Age Employment Rate and Personal Income Tax Rate Per Household, 2013



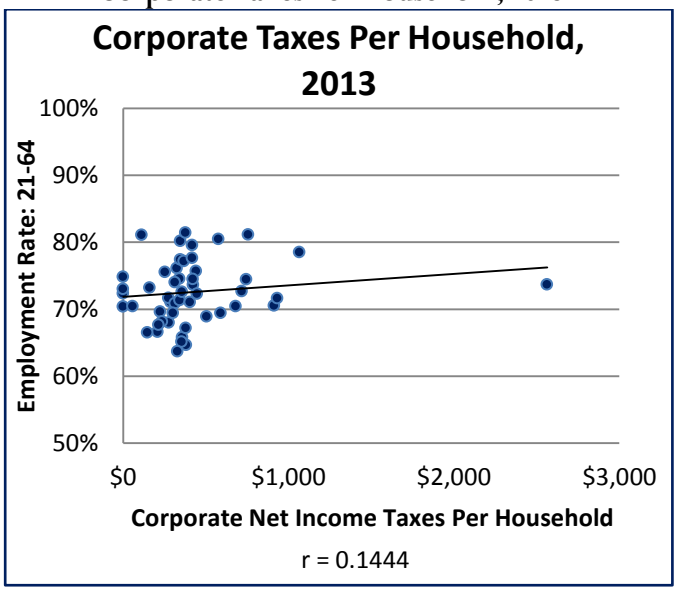
Sources: CEPR, 2014; Census, 2015b; Census, 2015a.

FIGURE 20: Working-Age Employment Rate and Average Sales Taxes Per Household, 2013



Sources: CEPR, 2014; Census, 2015b; Census, 2015a.

FIGURE 21: Working-Age Employment Rate and Corporate Taxes Per Household, 2013



Sources: CEPR, 2014; Census, 2015b; Census, 2015a.

Figures 19 through 21 characterize relationships between specific types of taxes and the employment rate– the personal income tax, the sales tax, and the corporate income tax. In all Figures, there are at least four states that do not have the evaluated tax. Our findings show that there is no relationship between any of the three tax variables and the working-age employment rate. The correlations are -1.1 percent with the personal income tax as a share of average household income (Figure 19), 0.6 percent with the average sales tax paid per household (Figure 20), and 14.4 percent with the corporate income tax rate per household (Figure 21). All states collect tax revenues in some form, whether the primary method is through income, sales, or corporate taxes.

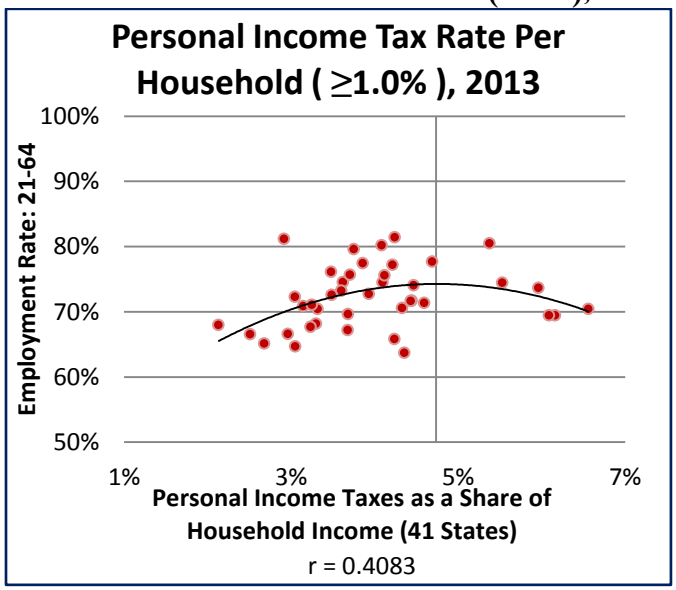
The findings from these three graphs indicate that the manner of collecting revenues does not seem to impact the employment rate. The type of tax or fee and its rate tend to have no real relationship to boosting employment. A possible explanation is that taxes may become too burdensome at some high level, but that no individual U.S. state approaches such a level. However, if states with an effective personal income tax rate of less than 1.0 percent are omitted, a "Laffer Curve" with a moderate 40.8 percent relationship does emerge (Figure 22). The data omits nine states, so definitive conclusions cannot be drawn. Still, it is worth noting that the curve does suggest that the "optimal" effective personal income tax rate is 4.74 percent.

Among all analyzed tax and government spending relationships, Figure 23 shows the strongest association. There is a moderate positive relationship between a state's budget surplus and its working-age employment rate, exhibited by a 33.3 percent correlation. The budget surplus rate is calculated by dividing all remaining revenue after expenditures by total collected revenue. In effect, it is a "rainy day" fund in case market conditions deteriorate and tax revenues decline. Higher budget surpluses tend to instill confidence among investors, workers, and voters that a state government has its financials in order.

In 2013, Illinois' total state revenues amounted to $84.5 billion. This includes $38.7 billion in General Fund revenues (45.8 percent); $17.0 billion from the federal government (20.1 percent); $18.9 billion in "insurance trust revenue" such as workers' compensation, unemployment compensation, and pension contributions (22.4 percent); and the rest from miscellaneous revenue such as lotteries, fines, tolls, and airport fees (11.7 percent). Total expenditures on all functions of government, however, summed up to $75.3 billion, leading to an *overall* budget surplus of 10.9 percent.[5] This included a $1.0 billion surplus of total receipts over total disbursements in the General Fund (Nuding, 2015). However, the state's budget now faces a deficit due the phase-out of the temporary income and corporate tax hikes and declines in federal government revenues.

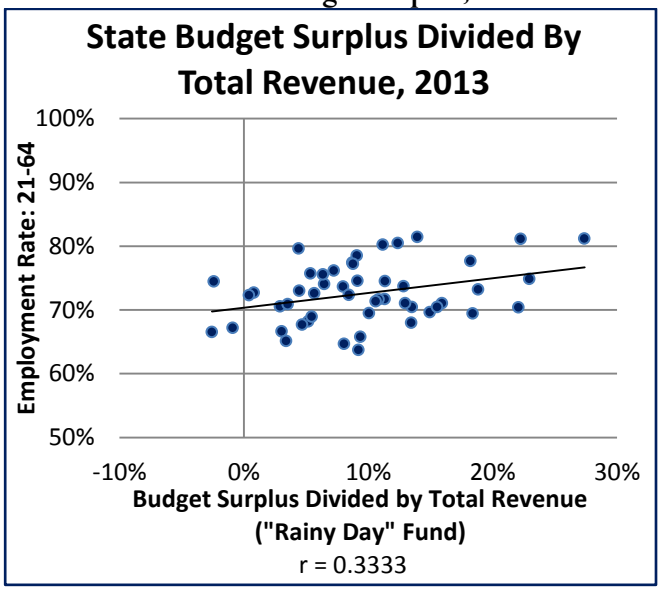
[5] In 2013, the three states with deficits of total state expenditures on all functions exceeding total state revenues from all sources were Louisiana (-2.6 percent), Massachusetts (-2.4 percent), and Kentucky (-0.9 percent).

FIGURE 22: Working-Age Employment Rate and Household Personal Income Tax Rate (≥1.0%), 2013



Sources: CEPR, 2014; Census, 2015b; Census, 2015a.

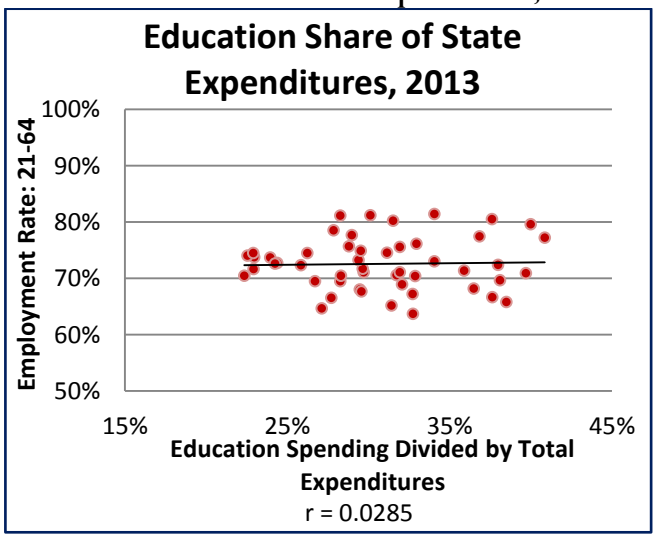
FIGURE 23: Working-Age Employment Rate and Total State Budget Surplus, 2013



Sources: CEPR, 2014; Census, 2015b; Census, 2015a.

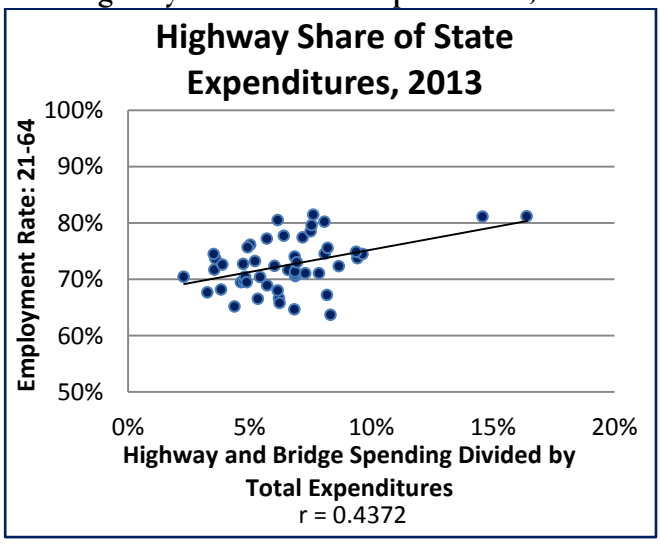
As previously discussed, the levels of educational attainment and transportation infrastructure are the factors demonstrating the strongest relationship with the working-age employment rate. Related to those employment supports are state expenditures directly tied to education and transportation. Figures 24 and 25 display the employment associations with education spending divided by total expenditures and highway spending divided by total expenditures. Highway spending includes spending on all roads, bridges, and capital assets owned by the state, which are typically administered by the state's Department of Transportation. While the overall educational levels of the state's eligible workforce is strongly related to employment, there is no relationship between the education share of state expenditures and the working-age employment rate, with a correlation of 2.9 percent (Figure 24). But, with a correlation of 43.7 percent, there is a moderate strong relationship between the highway share of state expenditures and the working-age employment rate (Figure 25). Though not shown, the correlation between a state's highway share of total expenditures and its public road miles per 100,000 persons is 81.0 percent, indicating that the two are almost perfectly related.

FIGURE 24: Working-Age Employment Rate and Education Share of State Expenditures, 2013



Sources: CEPR, 2014; Census, 2015b.

FIGURE 25: Working-Age Employment Rate and Highway Share of State Expenditures, 2013

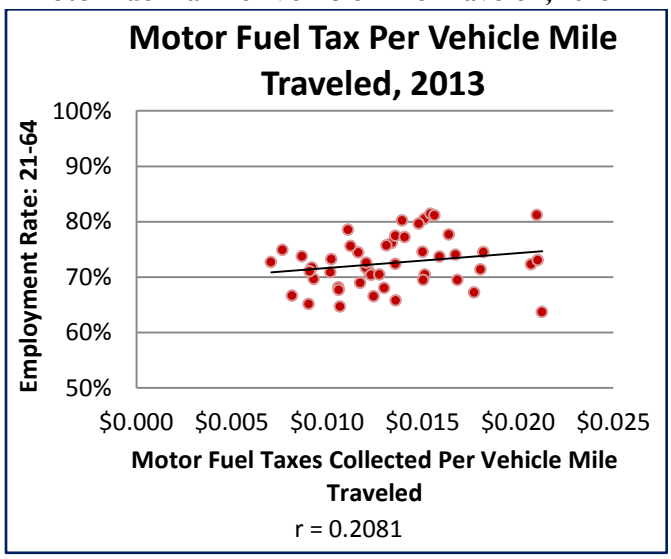


Sources: CEPR, 2014; Census, 2015b.

States primarily fund road and bridge infrastructure through motor fuel taxes paid at the pump, though alternatives to replace the gas tax have been proposed, such as a mileage-based user fee (Manzo & Poulos, 2015). Figure 26 divides total motor fuel taxes collected in a state by the total vehicle miles traveled in the state, as estimated by the 2013 *State Transportation Statistics* by the Bureau of Transportation Statistics of the U.S. Department of Transportation (USDOT, 2015). Motor fuel tax per vehicle mile traveled is then pitted against the working-age employment rate. The data reveal a weak positive relationship, with a 20.8 percent correlation. While a higher gas tax is associated with a higher employment rate, this is because gas tax revenues fund highway expenditures to construct public roads and reduce congestion. Still, raising the motor fuel tax or implementing a new user fee is policy that can be used to support employment through investments in horizontal infrastructure.

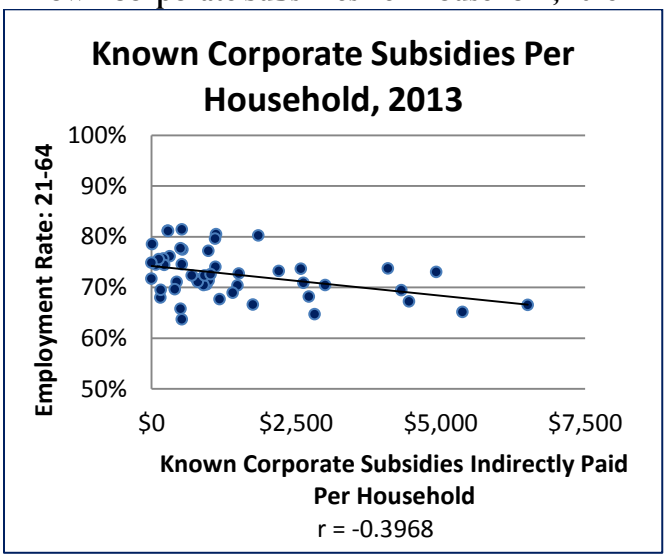
Lastly, research by Veronique de Rugy (2014) of George Mason University finds that "corporate welfare is a significant problem at the state level." Not all corporate subsidies are known because the data is "inconsistently scattered among various government reports and websites," if it is reported at all. However, a Subsidy Tracker compiled by Good Jobs First allows researchers to draw general conclusions from all identified subsidies. There is a moderate negative relationship, -39.7 percent, between the dollar value of known corporate subsidies indirectly paid by each household and the working-age employment rate in a state (Figure 27). While some politicians and commentators claim that business subsidies, tax breaks, and enterprise or tax increment financing zones encourage employment growth, Figure 27 actually points to the opposite conclusion: Corporate welfare reduces the employment rate, hurts workers, and transfers taxpayer dollars to corporations.

FIGURE 26: Working-Age Employment Rate and Motor Fuel Tax Per Vehicle Mile Traveled, 2013



Sources: CEPR, 2014; Census, 2015b; USDOT, 2015.

FIGURE 27: Working-Age Employment Rate and Known Corporate Subsidies Per Household, 2013



Sources: CEPR, 2014; De Rugy, 2014.

Section 3: The Impact of Each Variable

Regression Analyses

To parse out the actual and unique impact of a particular variable on the working-age employment rate, ordinary least squares (OLS) regression models are used. This technique describes "how much" a factor is responsible for increasing or decreasing the employment rate. For example, how much is a higher minimum wage responsible, if at all, for a higher or lower employment rate in a state? Due to the problem of "multicollinearity" in which two explanatory factors are closely related– such as the highway share of state expenditures and the number of public road miles per 100,000 persons– the model is limited to 17 of the most important variables.

The analysis finds five factors that are statistically significant (Figure 28).

First, a one percentage-point increase in the share of the population with a bachelor's degree is statistically associated with a 0.80 percentage-point increase in the employment rate. Although a 0.8 percentage-point increase may seem small, in Illinois this equates to approximately 60,000 new working-age residents that would have a job.

Second, a one percentage-point increase in the share of three and four year old children enrolled in a state early childhood education program also again has a statistically significant impact, this time increasing the working-age employment rate by 0.07 percentage point. In Illinois, just 23 percent of three and four year olds are enrolled in a state ECE program. The analysis finds that doubling the number of these children in ECE programs would increase the working-age employment rate by 1.54 percentage points, or by over 115,000 workers.

State spending on highways and bridges, the average travel time to work, and the state budget surplus are the three additional factors that statistically influence the working-age employment rate (Figure 28). A one percentage-point increase in the highway share of state expenditures is statistically associated with a 0.39 percentage-point increase in the working-age employment rate. Similarly, a one minute rise in the average commute time lowers the employment rate on average by 0.005 percentage point. A 20 minute drop in mean travel time to work would increase the employment rate by 0.09 percentage point. Furthermore, a one percentage-point increase in the state's total budget surplus over total revenue is associated with a 0.20 percentage-point increase in the working-age employment rate.

There are also two variables that have suggestive impacts on the working-age employment rate, with significance at the 10-percent confidence level. A one dollar increase in the state minimum wage has a suggestive but insignificantly negative impact on the working-age employment rate (-0.02 percentage point), which aligns with economic research showing no or a very small negative impact of the minimum wage on employment (Wolfson & Belman, 2013; Dube et al., 2011; Doucouliagos & Stanley, 2009). A one percentage-point increase in worker health insurance coverage has a suggestive but insignificantly positive impact on the working-age employment rate (0.21 percentage point). The number of state child care workers per 1,000 children under four years old, the share of workers using public transportation to commute to work, the union membership rate, "right-to-work" legislation, the number of unemployment insurance weeks offered by a state, the share of workers with pension or retirement coverage, the average personal income tax rate, known corporate subsidies, the average value of the Earned Income Tax Credit, and the share of the population receiving food stamps all have no statistical impact on the working-age employment rate.

The final column in Figure 28 provides conclusions on the impacts of each variable. All five variables that have statistical significance are deemed to have "significant impacts" on the working-age employment rate. If a public policy or economic variable has significance at only the 10 percent level *or* if it has a moderate or strong relationship in the correlational analysis, then it is considered to have a "suggestive impact" on the employment rate. A factor has "no impact" at all if it has no or a weak correlation between the working-age employment rate *and* is insignificant.

Seven public policies have suggestive impacts on the working-age employment rate (Figure 28). More health insurance coverage for workers, more pension coverage for workers, and more state child care workers may all positively affect the working-age employment rate, but there is not enough evidence to draw a confident conclusion. A higher minimum wage, a higher personal income tax rate, a higher amount of corporate subsidies paid by taxpayers, and a higher violent crime rate may all negatively affect the working-age employment rate, though again there is not enough evidence to draw a confident conclusion.

All of the suggestive impacts are likely true "at some point." As an example, increasing the minimum wage from $8.25 per hour in Illinois to $10.00 per hour is unlikely to have a significant impact on the employment rate. The higher wages at the lower end of the income distribution would actually stimulate consumption and offset the negative employment effect (Manzo & Bruno, 2014). But the minimum wage is just that: A minimum. Increasing the wage floor to an extreme for which no one advocates, such as $100.00 per hour, would have negative impacts. The marginal cost exceeds the marginal benefit *at some point*. Another example is that a personal income tax rate of 100 percent, again at the extreme, would discourage every person from working– so the tax becomes too burdensome *at some point*. For states, this threshold is possibly after a personal income tax rate of 4.74 percent is reached for the average household (as demonstrated in Figure 22).

FIGURE 28: Statistical Analyses of Independent Variables on the Working-Age Employment Rate

Variable	Correlation	Strength	Regression Model		Conclusion
Variables of Interest					
Bachelor's Degree or Higher	0.5211	Strong	0.7967	***	Significant Impact
3 and 4 Year Olds Enrolled in state ECE	-0.0693	None	0.0670	**	Significant Impact
State Child Care Workers Per 1,000 Children Under 4	0.3227	Moderate	-0.0001		Suggestive Impact
Highway Share of State Expenditures	0.4372	Moderate	0.3916	**	Significant Impact
Mean Travel Time to Work	-0.3253	Moderate	-0.0047	**	Significant Impact
Public Transit Commuters	0.0181	None	-0.0010		No Impact
Minimum Wage	-0.0808	None	-0.0207	*	Suggestive Impact
Union Membership Rate	0.0082	None	0.0422		No Impact
Right-to-Work Law	0.0143	None	0.0071		No Impact
Unemployment Insurance Weeks	0.1441	Weak	0.0010		No Impact
Income Tax Rate Per Household	-0.0110	None	-0.3656		Suggestive Impact
Known Corporate Subsidies Per Household	-0.3968	Moderate	0.0000		Suggestive Impact
Budget Surplus	0.3333	Moderate	0.2025	**	Significant Impact
Health Insurance Coverage If Employed	0.4140	Moderate	0.2299	*	Suggestive Impact
Pension/Retirement Coverage At Work	0.4993	Moderate	0.0644		Suggestive Impact
Mean Value of EITC	-0.6258	Strong	0.0001		*Collinear*
Food Stamp Recipient	-0.6714	Strong	-0.0018		*Collinear*
Public Road Miles Per 100,000 Persons	0.4438	Moderate			*Collinear*
Motor Fuel Taxes Per Vehicle Mile Traveled	0.2081	Weak			No Impact
Violent Crime Rate Per 100,000 Persons	-0.4839	Moderate			Suggestive Impact
Cash Public Assistance Recipient	0.0658	None			No Impact
Total State Tax Rate Per Household	0.0052	None			No Impact
Average Sales Taxes Per Household	0.0058	None			No Impact
Corporate Income Taxes Per Household	0.1444	Weak			No Impact
R^2	N/A	N/A	0.8805		N/A

There are also nine policies and factors in Figure 28 that have no impact on the working-age employment rate. Among these are "right-to-work" policies and the state-level unionization rate. A higher union density does not lower the working-age employment rate. Policies that reduce the power of labor unions, such as "right-to-work" laws, also have no discernible impact on employment. While a higher number of unemployment weeks may cause a small increase in the unemployment rate, it has no impact on the *employment rate*. This is because recipients are considered unemployed– that is, in the labor force and looking for work. In states with less generous unemployment benefits, many out-of-work individuals become discouraged and drop out of the labor force altogether, which artificially lowers the unemployment rate while having no impact on the working-age employment rate. Small or modest increases in state sales taxes, corporate income taxes, and motor fuel taxes all also have no statistical impact on the employment rate. Different states choose varying taxes and tax rates to levy, but all collect some form of taxation. The other variables that have no impact on the employment rate are the share of workers commuting via public transportation and the percentage of residents receiving cash assistance from the federal government.

Five Policies and Practices that Make a Difference

Improving the share of the population with a bachelor's degree increases a state's human capital, productivity, and technological and innovative capacities. These positive effects improve employment outcomes for all individuals, including low-wage workers. Possible public policies to improve educational attainment outcomes include significantly increasing tuition grants to lower the cost of college, increasing the number and availability of low-cost online courses (with responsive professors), reducing class sizes in K-12 educational institutions to improve student achievement to put children on the path to

college, creating degree programs that recognize life experience credits, and reducing the burden on transferring education credits into 4-year degree programs.

Increasing the number of three and four year olds in state early childhood education programs offers considerable benefits. First, the evidence is mounting that ECE programs significantly improve individual education and labor market outcomes later in life (Calman & Tarr-Whelan, 2005). ECE enrollment also supports employment because parents, particularly mothers, re-enter the workforce instead of staying at home with their kids. A possible public policy to increase the share of three and four year olds in state ECE programs is to offer significant subsidies to more parents to offset the cost of preschool. An even better approach would be to implement universal early childhood education funded by a small income tax increase on high-income families. Additionally, raising the number of people eligible for childcare financial assistance would support the employment rate.

Highway expenditures and reduced commute times to work also make a difference. Infrastructure investments support economic activity. Improving and expanding roads, bridges, highways, subways, railroads, and waterways all provide direct jobs to construction workers over the short term, increasing consumer demand in an economy. Over the long run, high-quality infrastructure investment benefits businesses by allowing them to efficiently bring their product or service to market, benefits workers by connecting them to jobs, and benefits families by reducing time costs of congestion. The simplest public policy to improve state spending on public infrastructure and reduce the average travel time to work is to raise the state motor fuel tax, which is not pegged to inflation and loses real value every year. But, because corporate average fuel economy (CAFE) standards are rising and automobiles are becoming more fuel efficient, motor fuel tax revenues are declining across the country. A technologically modern, sustainable revenue option based on vehicle miles traveled (VMT) is an alternative that has been proposed in many states. The Illinois Road Improvement and Driver Enhancement (I-RIDE) program is one such proposal that increases revenues for roads as well as public transit systems in Illinois (Manzo & Poulos, 2015). State governments should also "lockbox" their road construction funds and prohibit using motor fuel taxes and vehicle license fees on any government function other than improving transportation infrastructure. Wisconsin voters, for example, passed a constitutional amendment in November 2014 to lockbox the state's transportation fund, by a vote of 80 percent to 20 percent (Ballotpedia, 2014).

States with higher budget surpluses also tend to have higher working-age employment rates. Budget surpluses improve investor confidence in a state and ensure that funds are available during recessions and other downturns in the business cycle. Public policy changes to turn budget deficits into budget surpluses, especially in Illinois, should increase tax revenue while making necessary cuts to programs that do not support employment. Many states can increase personal income tax rates while cutting tax subsidies to corporations. Reducing tax exemptions and closing loopholes can also increase revenues. In addition, increased legalization of gambling and recreational marijuana could increase state tax revenues while reducing spending on police and correctional facilities. Any number of options could be pursued to improve the budget and support positive employment outcomes.

Section 4: A $3.5 Billion Policy Proposal

To support employment, Illinois and other state governments should use taxpayer dollars to implement policies and programs related to the four variables that have significant impacts. This section presents the effect of a $3.5 billion increase in Illinois' available revenue spent on public policies to support employment. The amount is predicated on increasing the state's flat personal income tax rate from 3.75 percent to 4.75 percent. This reflects the *potentially* optimal rate of 4.74 percent reported in Figure 22 but is slightly above the balanced-budget recommendation of 4.25 percent by The Institute for Illinois' Fiscal Sustainability at the Civic Federation (Civic Federation, 2015). The retroactive income tax increase would generate approximately $3.515 billion in additional revenue.[6]

[6] Because the policy proposal includes road construction and investments in mass transit, this part of the $3.5 billion could also be imagined as a combination of a smaller retroactive income tax increase and an increase in the motor fuel tax. For simplicity, however, this policy change only assumes an income tax increase. Spending General Fund revenues on public infrastructure can be justified by the past sweeps from the Road Fund into the General Fund.

Projected impacts are presented in two simulations of the Illinois economy. The first is a straightforward application of the regression model, which is a "static" analysis. The second utilizes IMPLAN, the leading economic impact analysis software, to produce a "dynamic" simulation and measure the impact through a multiplier effect, or "ripple effect," on the entire economy.

It is recommended that the $3.5 billion in additional tax revenue be invested in the following four areas:

1. **$375,000,000 is spent on public higher education**: $15,000 annual grants to make the cost of attending public universities more affordable for 25,000 students. Complete College America (2011) finds that 37 percent of Illinois students who enroll in a public postsecondary education institution matriculate in a four-year university, and that 65 percent of those students graduate in six years. Conservatively assuming a 60 percent graduation rate, these grants would "produce" 15,000 new graduates with bachelor's degrees.

2. **$375,000,000 is spent on the construction of new highway, road, and bridge infrastructure**: In 2004, the average construction cost per lane-mile in Illinois was $653,459 (Poupore, 2004). From March 2003 to December 2014, the National Highway Construction Cost Index (NHCCI) increased by 11.6 percent (FHWA, 2015). Conservatively assuming a 15 percent increase in costs, the new expenditures would allow for the construction of 500 lane-miles of highway.

3. **$375,000,000 is spent on mass transit systems to reduce commute times to work, particularly in the Chicago metropolitan area**: Although the "public transit commute" variable has no statistical impact on the working-age employment rate, a shorter travel time supports work. Congestion in the Chicago area costs the state $7.3 billion in annual economic output (MPC, 2008). The new expenditures could, over four years, allow the state to construct the Metra's Union Pacific North and West improvements and the Chicago Transit Authority's Orange Line extension, which cost a total of $1.47 billion according to the Chicago Metropolitan Agency for Planning (CMAP, 2014). These three improvements are projected to make 24,478 jobs newly accessible to workers in 75 minutes or less.

4. **$375,000,000 is spent on state early childhood education programs**: A total of 75,305 three and four year olds in Illinois were enrolled in a state early childhood education program, or 23 percent of all three and four year olds. Annual state spending was $241.2 million, or $3,189 per child enrolled (NIEER, 2013). The new expenditures would more than double the state's ECE investment. Conservatively assuming a state commitment of $5,000 per new child enrolled, the policy change could increase the number of three and four year olds enrolled in a state ECE program by 75,000 children.

While not a direct labor market policy, $2,000,000,000 should be used to reduce the deficit and implement the state budget recommendations proposed by the Civic Federation: This policy proposal to support employment is based on a retroactive increase in the personal income tax from 3.75 percent to 4.75 percent, 0.50 percentage-point higher than the rate proposed by the nonpartisan Civic Federation. The Civic Federation estimates that their proposed increase would increase income tax revenues by $1.77 million in the 2016 fiscal year (Civic Federation, 2015). The policy proposal to support employment in this paper allows the state to make critical education and infrastructure investments while also following the Civic Federation's sound recommendations to balance the budget and pay down the bills. Note that the Civic Federation's proposal includes other revenue-generating and cost-cutting measures that close the rest of the current budget deficit. This $3.5 billion policy proposal assumes that the other Civic Federation recommendations are adopted and carried out as well.

The first economic forecast of this $3.5 billion policy proposal is the regression analysis (Figure 29). Using the inputs, the share of the population with a bachelor's degree or higher would increase by 0.18 percentage point, the share of total state spending devoted to highways would increase by 0.36 percentage point, and the average time spent commuting each day would be reduced by 0.37 minute per day per worker. The share of three and four year old children enrolled in a state ECE program would nearly double, increasing by 22.91 percentage points, while the deficit reduction measures would create an additional 2.62 percentage point surplus over total revenue. These public policy changes would boost the working-age employment rate by 2.40 percentage points, mainly due to parents re-entering the workforce and businesses re-gaining confidence in the State of Illinois. Compared to other states, the change in the working-age employment rate would improve

Illinois' ranking from 28th (71.62 percent) to 19th (74.02 percent). The total impact would amount to nearly 180,000 new jobs supported.

FIGURE 29: Predicted Impact of $3.5 Billion Policy Proposal on Illinois' Employment Rate, OLS Regression

Policy Change	A: Percentage-Point (or Minute) Change	B: Estimated Effect (Regression)	A*B: Predicted Change in Employment Rate
$375,000,000 Higher Education	0.1763	0.7967	+0.1405
$375,000,000 Highways	0.3593	0.3916	+0.1407
$375,000,000 Transit (Travel Minutes)	-0.3700	-0.0047	+0.0017
$375,000,000 Early Childhood Education	22.9068	0.0693	+1.5874
$2,000,000,000 Deficit Reduction	2.6204	0.2025	+0.5306
Total Change in Employment Rate (21-64)	+2.4010 percentage-point increase		
Jobs Supported for Workers (21-64)	**+179,426 jobs created**		

The second economic forecast is based on spending multipliers in an input-output model. The analysis is unrelated to the analysis in Figure 28 but is used as an independent "check" of the predicted impacts in Figure 29. IMPLAN is a data-driven software measuring the inter-industry relationships within an economy. Specifically, the input-output model measures the market transactions between businesses and consumers. The framework allows for the examination of how a *spending or income change* in one area affects the entire economy. Thus, this analysis quantifies impacts based on the respective $375 million increases in government spending, the $2 billion change in the budget deficit, and the $3.5 billion decrease in household incomes from a 1 percentage point retroactive increase in the personal income tax (Figure 30).

The economic impact analysis finds that, despite the drop in after-tax household income, the public policy spending changes cause a net gain in employment, worker income, and economic output (Figure 30). This policy proposal would be predicted to support over 48,000 new jobs in total, increasing the working-age employment rate by 0.65 percentage point. The result would be a $3.1 billion increase in total labor compensation, which almost entirely offsets losses from the personal income tax rate hike and demonstrates how a higher tax might not reduce consumer demand. Ultimately, the market simulation finds that the state's economic output would expand by $2.2 billion on net, even after accounting for the $3.5 billion "transfer" from households to the government. Although the economic impact analysis (Figure 30) yields results that show lower benefits to Illinois than the regression model (Figure 29), they both lead to the same compelling conclusion: Public sector expenditures on higher education, early childhood education, public infrastructure, congestion reduction, and balanced budgets all support strong employment outcomes and improve the economy.

FIGURE 30: Predicted Impact of $3.5 Billion Policy Proposal on Illinois' Employment Rate, IMPLAN Model

IMPLAN Simulation of Policy Change		Employment	Labor Income	Economic Value Added
Direct Effect		47,413 jobs	$2.94 billion	$2.00 billion
Indirect and Induced Effects		864 jobs	$0.12 billion	$0.21 billion
Total Effect for Workers		**+48,277 jobs**	**+$3.06 billion**	**+$2.21 billion**
Implied Change in the Employment Rate (21-64)		+0.6460 percentage-point increase		
Industry Spending Changes		Household Income Changes		
$375,000,000	Colleges, Universities, Professional Schools	-$129,046,507	Households Earning $0-35K	
$375,000,000	Construction of New Nonresidential Structures	-$250,483,173	Households Earning $35-50K	
$375,000,000	State & Local Government Passenger Transit	-$515,206,869	Household Earning $50-75K	
$375,000,000	Payroll (State & Local Gov't, Education)	-$508,060,887	Households Earning $75-100K	
$2,000,000,000	Payroll (State & Local Gov't, Non-Education)	-$809,582,564	Households Earning $100-150K	
		-$1,301,341,803	Households Earning $150K+	

Section 5: Implications and Conclusions

A higher employment rate generally improves well-being, reduces poverty, and increases tax revenues. Policies to support employment therefore tend to have large positive impacts for states. Among 35 public policies and economic phenomena

investigated in this analysis, five make a difference in the working-age employment rate. The policies that support employment include increasing the share of the population with a bachelor's degree, increasing the share of three and four year old children enrolled in a state early childhood education program, increasing state spending on highways and bridges, reducing the average travel time to work, and improving the state budget surplus. This finding echoes many of the conclusions drawn in studies of advanced national economies (Kleven, 2014; Fialová, 2011; Blomquist et al., 2009).

The public policies that "work" for workers are all *investments* using taxpayer dollars. When the government invests in its road and other transportation infrastructure, businesses and workers become more connected and have more time to engage in productive activities. Physical capital investment supports both workers and employers. When the government invests in educating residents of all ages, businesses and workers become more innovative, more productive, and more efficient. Human capital investment supports both workers and employers. When the government balances the budget and carries over surplus revenues, the savings– which can be invested– are an investment in the future. Businesses and workers know that their government is responsible and will be able to make critical training and infrastructure investments in the future, especially during economic downturns when they are severely needed. A budget surplus supports both workers and employers.

Other policies and phenomena have no discernible impact on the employment rate, but that does not mean that they are not needed. While the employment rate is an important indicator to determine the health of an economy, it is not the only measure. Alternative economic or social justifications exist for reducing the violent crime rate or increasing the adult minimum wage or changing the corporate tax rate, but this study does not address those other reasons. The analysis can conclude, however, that certain changes will have no effect. Curtailing union membership, reducing the minimum wage, and providing corporate subsidies are all policy adjustments that would not increase employment. On the other hand, slightly higher personal income taxes are not expected to reduce employment. The whole picture– the *costs* of tax revenues and the *benefits* of how they are used– must be considered.

A $3.5 billion policy proposal in Illinois to retroactively increase the personal income tax rate by one percentage point and use the additional revenues for the five policies that support employment would generate substantial benefits. Even after accounting for the costs of a higher income tax, the policy changes would boost net economic output by at least $2 billion. The proposal is also predicted to support between 48,000 and 180,000 new jobs. The policy proposal makes critical investments in early childhood and higher education, in infrastructure, and in financial solvency. As a result, the proposal supports parents who want to enter the workforce, supports skills development for workers, supports efficient transportation systems, supports congestion reduction, and supports a viable public sector. Ultimately, the $3.5 billion policy proposal supports employment in Illinois.

It is critical for lawmakers and voters to examine both costs and benefits because public policy choices have consequences. Some discourage a potential worker from entering the labor market and reduce opportunities for families to achieve the American Dream. Other public policies facilitate middle-class job creation, a skilled workforce, and a strong economy. The policies that support employment all help to accomplish the latter. The State of Illinois should take steps to increase investment in public education, increase investment in public infrastructure, and a balance the state budget.

Appendix

Sources

Census Bureau (Census). (2015). 2013 *American Community Survey* 1-Year Estimates. Available at http://factfinder.census.gov/.

Center for Economic and Policy Research (CEPR). (2013). 2013 *Current Population Survey* Outgoing Rotation Groups: CPS ORG Uniform Extracts, Version 2.0.1. Washington, DC. Available at http://ceprdata.org/cps-uniform-data-extracts/cps-outgoing-rotation-group/cps-org-data/.

Center on Budget and Policy Priorities (CBPP). (2013). "Unemployment Rates and Weeks of Unemployment Insurance (UI) Available." Updated tables available at http://www.cbpp.org/unemployment-rates-and-weeks-of-unemployment-insurance-ui-available-0.

Child Care Aware (CCA) (2014). *Child Care in America: 2013 State Fact Sheets*. Available at http://cca.worksmartsuite.com/UserContentStart.aspx?category=28.

De Rugy, Veronique. (2014). "Ranking Known State Subsidies to Private Businesses." Mercatus Center, George Mason University. Available at http://mercatus.org/publication/ranking-known-state-subsidies-private-businesses.

Federal Bureau of Investigation (FBI). (2013). *Crime in the United States, 2013*. Available at www.fbi.gov.

IMPLAN (2013). IMPLAN Group, LLC, IMPLAN System (data and software).16740 Birkdale Commons Parkway, Suite 206, Huntersville, NC 28078. Available at www.implan.com.

National Institute for Early Education Research (NIEER). (2013). *The State of Preschool 2013*. Graduate School of Education at Rutgers University. Available at http://nieer.org/sites/nieer/files/yearbook2013.pdf.

Public Religion Research Institute (PRRI). (2015). 2013 *American Values Atlas*. Available at https://ava.publicreligion.org/.

U.S. Department of Labor (USDOL). (2015). "Changes in Basic Minimum Wages in Non-Farm Employment Under State Law: Selected Years 1968 to 2013." Wage and Hour Division. Available at http://www.dol.gov/whd/state/stateMinWageHis.htm.

U.S. Department of Transportation (USDOT). (2015). 2013 *State Transportation Statistics* by the Bureau of Transportation Statistics. Available at http://www.rita.dot.gov/bts/sites/rita.dot.gov.bts/files/publications/state_transportation_statistics/index.html.

Bibliography

Aaronson, Daniel, Sumit Agarwal, and Eric French. (2012). "The Spending and Debt Response to Minimum Wage Hikes." *American Economic Review* 102(7): 3111-3139. Available as 2009 working paper from http://faculty.chicagobooth.edu/erik.hurst/teaching/minwagecons160.pdf.

Andersen, Torben, Nicole Bosch, Anja Deelen, and Rob Euwals. (2011). "The Danish Flexicurity Model in the Great Recession." Vox: CEPR's Policy Portal. Available at http://www.voxeu.org/article/flexicurity-danish-labour-market-model-great-recession.

Ballotpedia. "Wisconsin Transportation Fund Amendment, Question 1 (2014). Ballotpedia.org. Available at http://ballotpedia.org/Wisconsin_Transportation_Fund_Amendment,_Question_1_(2014).

Barro, Robert. (1997). *Determinants of Economic Growth: A Cross-Country Study*. National Bureau of Economic Research. Available at http://www.nber.org/papers/w5698.pdf.

Berger, Noah and Peter Fischer. (2013). *A Well-Educated Workforce Is Key to State Prosperity*. Economic Analysis and Research Network. Available at http://www.epi.org/publication/states-education-productivity-growth-foundations/.

Blomquist, Sören, Vidar Christiansen, and Luca Micheletto. (2009). *Public Provision of Private Goods and Nondistortionary Marginal Tax Rates: Some Further Results*.Uppsala University; University of Olso; University of Milan. Available at http://www.diva-portal.org/smash/get/diva2:236593/FULLTEXT01.pdf .

Bureau of Labor Statistics (BLS). (2015). "Alternative Measures of Labor Underutilization." U.S. Department of Labor. Available at http://www.bls.gov/news.release/empsit.t15.htm.

Calman, Leslie and Linda Tarr-Whelan. (2005). *Early Childhood Education for All: A Wise Investment*. Legal Momentum; MIT Workplace Center. Available at http://web.mit.edu/workplacecenter/docs/Full%20Report.pdf.

Cohen, Jacob. (1992). "A Power Primer." *Psychological Bulletin* 112(1): 155-159.Available at http://psycnet.apa.org/?&fa=main.doiLanding&doi=10.1037/0033-2909.112.1.155.

Chicago Metropolitan Agency for Planning (CMAP). (2014). "Go To 2040 Update Appendix: Major Capital Projects." Chicago Metropolitan Agency for Planning. Available at http://www.cmap.illinois.gov/documents/10180/332742/Update+Major+Capital+Projects+FINAL.pdf/51a1943f-0c2d-4243-8d94-9232f4598566.

Civic Federation. (2015). *State of Illinois FY2016 Budget Roadmap: State of Illinois Budget Overview, Projections and Recommendations for the Governor and the Illinois General Assembly. The* Institute for Illinois' Fiscal Sustainability at the Civic Federation. Available at https://www.civicfed.org/sites/default/files/REPORT--FY2016IllinoisRoadmap.pdf.

Coe, David T. and Snower, Dennis J. (1997). "The Case for Fundamental Labor Market Reform." *Staff Papers (International Monetary Fund*), Vol. 44, No. 1 (Mar., 1997), pp. 1-35.

Collins, Benjamin. (2012). *Right to Work Laws: Legislative Background and Empirical Research*. Congressional Research Service. U.S. Congress. Available at http://digitalcommons.ilr.cornell.edu/cgi/viewcontent.cgi?article=1984&context=key_workplace.

Complete College America. (2011). "Illinois: 2011." Complete College America. Note that the numbers are misleading at first: 25 percent of students who enroll in a public college or university graduate from a full-time 4-year public college, but only 37 percent of this population enrolls in a full-time 4-year institution. Thus, the graduation rate is 25/37 = 67.6 percent. Available at http://www.completecollege.org/docs/Illinois.pdf.

Gennetian, Lisa A., Danielle A. Crosby, Aletha C. Huston and Edward D. Lowe (2004). "Can Child Care Assistance in Welfare and Employment Programs Support the Employment of Low-Income Families?" *Journal of Policy Analysis and Management,* Vol. 23, No. 4 (Autumn, 2004), pp. 723-743.

Doucouliagos, Hristos and T.D. Stanley (2009). *Publication Selection Bias in Minimum-Wage Research? A Meta Regression Analysis*. Deakin University Australia; Hendrix College. Available at https://www.deakin.edu.au/buslaw/aef/workingpapers/papers/2008_14eco.pdf.

Dube, Arindrajit, T. William Lester, and Michael Reich. (2011). *Do Frictions Matter in the Labor Market? Accessions, Separations and Minimum Wage Effects*. University of Massachusetts- Amherst; University of North Carolina- Chapel Hill; University of California- Berkeley. Available at http://ftp.iza.org/dp5811.pdf.

Dube, Arindrajit, T. William Lester, and Michael Reich. (2014). *Minimum Wage Shocks, Employment Flows and Labor Market Frictions*. University of Massachusetts- Amherst; University of North Carolina- Chapel Hill; University of California-Berkeley. Available at http://www.irle.berkeley.edu/workingpapers/149-13.pdf.

Dynan, Karen, Jonathan Skinner, and Stephen Zeldes. (2004). "Do the Rich Save More?" *Journal of Political Economy* 112(2): 397-444. Available at https://www.dartmouth.edu/~jskinner/documents/DynanKEDotheRich.pdf.

Estevão, Marcello. (2007). "Policies to Raise Employment," *IMF Staff Papers*, 54 (1): 113-138.

Federal Highway Administration (FHWA). (2015). "Construction Cost Trends for Highways." NHCCI Index. U.S. Department of Transportation. Available at http://www.fhwa.dot.gov/policyinformation/nhcci/pt1.pdf.

Fialová, Kamila. (2011). *Labor Market Institutions and their Effect on Labor Market Performance in OECD and European Countries*. Charles University in Prague. Available at http://siteresources.worldbank.org/ECAEXT/Resources/258598-1284061150155/7383639-1323888814015/031412_02.pdf.

Gallup-Healthways. (2014). *State of American Well-Being: 2013 State, Community and Congressional District Analysis*. Gallup-Healthways Well-Being Index; 11. Available at http://cdn2.hubspot.net/hub/162029/file-610480715-pdf/WBI2013/Gallup-Healthways_State_of_American_Well-Being_Full_Report_2013.pdf.

Hogler, Raymond. (2011). "How Right to Work Is Destroying the American Labor Movement: From the Ku Klux Klan to the Tea Party." *Employee Responsibilities and Rights Journal* 23: 295-304. Available at http://link.springer.com/article/10.1007%2Fs10672-011-9183-1.

Hughes, Johnathan and Louis Cain. (2003). *American Economic History* (Sixth Edition). New York: Addison Wesley; 498. Newest editions available at http://www.pearsonhighered.com/hughes/.

Jenkins, J. Craig, Kevin T. Leicht and Heather Wendt. (2006). "Class Forces, Political Institutions, and State Intervention: Subnational Economic Development Policy in the United States, 1971–1990," *American Journal of Sociology*, 111 (4), January 2006: 1122-1180.

Kalleberg, Arne L., Barbara F. Reskin and Ken Hudson. (2000). "Bad Jobs in America: Standard and Nonstandard Employment Relations and Job Quality in the United States," *Sociological Review*, 65 (2), April: 256-278.

Kleven, Henrik Jacobsen. (2014). "How Can Scandinavians Tax So Much?" *Journal of Economic Perspectives* 28(4): 77-98. Available at http://www.henrikkleven.com/uploads/3/7/3/1/37310663/kleven_jep2014.pdf.

Krueger, Alan. (2012). "The Rise and Consequences of Inequality in the United States." Council of Economic Advisers testimony. Available at https://www.whitehouse.gov/sites/default/files/krueger_cap_speech_final_remarks.pdf.

Lehmann, M. Christian (2014). *Labor Market Equilibrium Effects of Cash Transfers: Evidence from a Structural Model and a Randomized Experiment*. University of Brasilia. Available at http://www.anpec.org.br/encontro/2014/submissao/files_I/i13-cd41ccb0047d931eb836f774a89719ce.pdf.

Levitt, Steven. (2004). "Understanding Why Crime Fell in the 1990s: Four Factors that Explain the Decline and Six that Do Not." *Journal of Economic Perspectives* 18(1): 163-190. Available at http://pricetheory.uchicago.edu/levitt/Papers/LevittUnderstandingWhyCrime2004.pdf.

Manzo, Frank. (2015). *Illinois Income Report: How Are You Doing This Tax Season?* Illinois Economic Policy Institute. Available at http://illinoisepi.org/countrysidenonprofit/wp-content/uploads/2013/10/ILEPI-Economic-Commentary-Illinois-Income-Report.pdf.

Manzo, Frank and Marc Poulos. (2015). *The I-RIDE Proposal: A Smart, Reliable Policy to Fund Transportation Infrastructure* (Version 2.0). Illinois Economic Policy Institute; Indiana, Illinois, Iowa Foundation for Fair Contracting. Available at http://illinoisepi.org/countrysidenonprofit/wp-content/themes/12/docs/i-ride.pdf.

Manzo IV, Frank and Robert Bruno. (2014). *Free-Rider States: How Low-Wage Employment in "Right-to-Work" States Is Subsidized by the Economic Benefits of Collective Bargaining*. Illinois Economic Policy Institute; University of Illinois at Urbana-Champaign. Available at https://ler.illinois.edu/wp-content/uploads/2015/01/Free-Rider-CB-States.pdf.

Manzo, Frank and Robert Bruno. (2014). *Minimum Wage, Maximum Benefits: How a $10 Wage Floor Impacts All Workers and the Economy*. Illinois Economic Policy Institute; University of Illinois at Urbana-Champaign. Available at http://illinoisepi.org/countrysidenonprofit/wp-content/uploads/2013/10/MinimumWageMaximumBenefit.pdf.

Metropolitan Planning Council (MPC). (2008). *Moving at the Speed of Congestion*. Metropolitan Planning Council. Available at https://www.metroplanning.org/uploads/cms/documents/mpcreport_movingatthespeedofscongestion.pdf.

Moore, Quinn, Robert G. Wood, and Anu Rangarajan. (2012). "The Dynamics of Women Disconnected from Employment and Welfare", Social Service Review, Vol. 86, No. 1 (March), pp. 93-118.

Neumark, David. (2002). "Youth Labor Markets in the United States: Shopping around vs. Staying Put," *The Review of Economics and Statistics*, 84 (3), August: 462-482.

Nuding, Tim. (2015). *Illinois State Budget: Fiscal Year 2016*. Governor's Office of Management and Budget. Governor Bruce Rauner. Available at http://www2.illinois.gov/gov/budget/Documents/Budget%20Book/Budget%20Book%20FY16/FY2016IllinoisOperatingBudgetBook.pdf.

Organisation for Economic Co-opertion and Development (OECD). (2006). "General Policies to Improve Employment Opportunities for All." *OECD Employment Outlook: Boosting Jobs and Incomes* (Chapter 3). Available at http://www.oecd.org/employment/emp/38569396.pdf.

Polling Report. (2015). "Work." PollingReport.com. Conclusions from 5 CBS News/*New York Times* Polls dating from 1/17-21/2014 to 5/28-31/2015 which respectively found 72 percent, 65 percent, 70 percent, 71 percent, and 71 percent of adults nationwide in favor of raising the minimum wage to $10.10. Available at http://www.pollingreport.com/work.htm.

Poupore, Raymond. (2004). *The Impact of Wages on Highway Construction Costs: Updated Analysis*. The Construction Labor Research Council. Available at http://www.heavy-highway.org/library/document-library/20090212172702.WageStudybooklet.pdf.

Saez, Emmanuel, Joel Slemrod, and Seth Giertz. (2010). *The Elasticity of Taxable Income with Respect to Marginal Tax Rates: A Critical Review*. University of California, Berkley; University of Michigan; University of Nebraska. Available at http://eml.berkeley.edu//~saez/saez-slemrod-giertzJEL10round2.pdf.

Schmitt, John. (2013). *Why Does the Minimum Wage Have No Discernible Effect on Employment?* Center for Economic and Policy Research. Available at http://www.cepr.net/documents/publications/min-wage-2013-02.pdf.

Stevans, Lonnie. (2009). "The Effect of Endogenous Right-to-Work Laws on Business and Economic Conditions in the United States: A Multivariate Approach." *Review of Law and Economics* 5(1): 595-614. Available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1027987.

Stevens, Philip and Martin Weale. (2003). *Education and Economic Growth*. National Institute of Economic and Social Research. Available at http://cee.lse.ac.uk/conference_papers/28_11_2003/martin_weale.pdf.

Stevenson, Betsey and Justin Wolfers. (2008). *Economic Growth and Subjective Well-Being: Reassessing the Easterlin Paradox*. University of Pennsylvania; Brookings Institution. Available at http://www.brookings.edu/~/media/Projects/BPEA/Spring-2008/2008a_bpea_stevenson.PDF.

Stiglitz, Joseph. (2013). *The Price of Inequality: How Today's Divided Society Endangers Our Future* (1st Edition). New York: W.W. Norton & Company; 83-117. Available at http://books.wwnorton.com/books/the-price-of-inequality/.

Stier, Haya, Noah Lewin Epstein, and Michael Braun. (2001). "Welfare Regimes, Family-Supportive Policies, and Women's Employment along the Life Course," *American Journal of Sociology*, Vol. 106, No. 6 (May), pp. 1731-1760.

Sutch, Richard. (2010). *The Unexpected Long-Run Impact of the Minimum Wage: An Educational Cascade*. National Bureau of Economic Research. University of California- Riverside. Available at http://www.nber.org/papers/w16355.

Trzcinski, Eileen and William T. Alpert. (1994). "Pregnancy and Parental Leave Benefits in the United States and Canada: Judicial Decisions and Legislation," *The Journal of Human Resources*, 29 (2), Special Issue: Women's Work, Wages, and Well-Being (Spring): 535-554.

Turkmen, Mutlu. (2013). "Investigation of the Relationship between Academic and Sport Motivation Orientations." *Middle-East Journal of Scientific Research* 16(7): 1008-1014; Table 6. Available at http://www.idosi.org/mejsr/mejsr16(7)13/20.pdf.

Weir, Margaret, (1992). Princeton, NJ, Princeton University Press. *Politics and Jobs: The Boundaries of Employment Policy in the United States*.

Weir, Margaret. (1987). "Full Employment as a Political Issue in the United States Source," *Social Research*, 54 (2), Summer: 377-402.

Western, Bruce and Katherine Beckett. (1999). "How Unregulated Is the U.S. Labor Market? The Penal System as a Labor Market Institution," *American Journal of Sociology*, Vol. 104, No. 4 (January), pp. 1030-60.

Wolfson, Paul and Dale Belman. (2013). "Does Employment Respond to the Minimum Wage? A Meta-Analysis of Recent Studies from the New Minimum Wage Research." *What Does the Minimum Wage Do?* (Chapter 2). W.E. Upjohn Institute for Employment Research. Available at http://research.upjohn.org/up_press/227/.

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