APPENDIX K:
FUNDING & FISCAL ANALYSIS

K.1 IDENTIFYING FUNDING SOURCES FOR THE KENTUCKY STATEWIDE CORRIDOR PLAN

This report outlines existing and potential funding sources at the federal and statewide levels, which were reviewed for likelihood and applicability in preparing this plan. The following section describes the funding sources that represent the most viable potential options for supporting the program of projects outlined in the Kentucky Statewide Corridor Plan (SWCP).

K.1.1 FEDERAL FUNDING SOURCES

The Fixing America's Surface Transportation (FAST) Act has guided federal funding for transportation since FY 2016. Originally scheduled to expire in 2020, it has been extended through September 30, 2021. While the details of future federal transportation funding are uncertain as of this report, it is assumed that future legislation will continue to provide a number of possible funding opportunities for the build out of the Kentucky Statewide Corridor Plan (SWCP) network, including formula funding and discretionary grant programs for road, bridge, bicycling, and walking projects.

Both formula funds and discretionary grant programs from the federal government require matching funds from the state. Federal funding has become more competitive despite contributing to a declining share of large project costs, thus requiring larger state/local commitments – this is particularly important to consider in the case of Kentucky where matching funds for formula federal-aid dollars have largely come from toll credits from the state's previous investment in state-sponsored toll roads, which has allowed KYTC the flexibility to use 100% federal funding on federal-aid projects in the past. Federal law governing highway allocations allows state DOTs or toll authorities to accrue toll credits by spending excess toll revenues on Title 23 highway capital improvement projects. KYTC phased out tolls on all existing parkway and turnpike facilities by 2006. Remaining credits from these past investments expired in FY 2020, however, and the state will be required to commit approximately $1.2 billion in state road funds over the next five years on federal-aid projects to cover the 20% local match and receive these federal-aid funds.

K.1.1.1 Federal Formula Funding

Kentucky receives annual apportionments of federal formula funds from FHWA (about $736 million in FY 2021). The breakdown of these formula funding programs is outlined in **Table K.1**, including the amount allocated for Kentucky in FY 2021. While future federal funding levels are uncertain until the passage of a new federal surface transportation bill, Kentucky's FY 2020 – FY 2026 Highway Plan (adopted in May 2020) assumed that formula funds allocated to Kentucky would follow the same trends as those present in the FAST Act – a straight-line projection of the annual apportionment values shown in **Table K.1** through FY 2026. These federal-aid dollars are fully programmed in Kentucky's FY 2020 – FY 2026 Highway Plan to fund projects incorporated into the Statewide Transportation Improvement Program (STIP), a fiscally constrained document that requires FHWA approval. Presently, the projects outlined in the SWCP are not included in the STIP and would need to be included in this document to receive formula federal funding.

Table K.1 – FAST Act Federal Formula Funding in Kentucky

PROGRAM NAME	DESCRIPTION	FY '21 FUNDING FOR KENTUCKY
National Highway Freight Program (NHFP)	Improves efficient movement of freight on the National Highway Freight Network (NHFN).	$25.4 M
Congestion Mitigation and Air Quality Improvement Program (CMAQ)	Provides a flexible funding source to State and local governments for transportation projects and programs to help meet the requirements of the Clean Air Act. Funding is available to reduce congestion and improve air quality.	$14.8 M
Metropolitan Planning	Creates a cooperative, continuous, and comprehensive framework for making transportation investment decisions in metropolitan areas.	$2.7 M
National Highway Performance Program (NHPP)	Provides support for the condition and performance of the National Highway System (NHS), for the construction of new facilities on the NHS, and to ensure that investments of Federal-aid funds in highway construction are directed to support progress toward the achievement of performance targets established in a State's asset management plan for the NHS.	$430.8 M
Surface Transportation Block Grant Program (STBG)	Provides flexible funding to best address State and local transportation needs.	$215.0 M
Highway Safety Improvement Program (HSIP)	Provides funding to achieve a significant reduction in traffic fatalities and serious injuries on all public roads, including non-State-owned public roads and roads on tribal lands. The HSIP requires a data-driven, strategic approach to improving highway safety on all public roads that focuses on performance.	$43.2 M
Railway-Highway Crossings Program	Provides funds for safety improvements to reduce the number of fatalities, injuries, and crashes at public railway-highway grade crossings.	$4.0 M
	Total	**$735.8 M**

In addition to the FAST Act-based funding shown in **Table K.1**, in December 2020, Congress passed a $900+ billion COVID-19 emergency relief bill, which includes $10 billion for state DOTs. This highway funding will be distributed to states according to the existing apportionment formulas, which means that this should translate to approximately $166 million[1] in additional funding for Kentucky. DOTs can use the funds for costs related to preventive maintenance, routine maintenance, operations, personnel, including salaries of employees or contractors, debt service payments, availability payments, and coverage for other revenue losses.

K.1.1.2 Federal Discretionary Grant Programs

The U. S. Department of Transportation (USDOT) also administers several discretionary grant programs, which are very competitive and require, as part of a rigorous application process, the applicant to demonstrate that the non-federal matching funds are fully committed. If sufficient non-federal funds are approved for the SWCP, Kentucky could be well positioned to obtain one or more funding awards from these federal programs, particularly the following programs (or their successors in forthcoming legislation) listed in **Table K.2**.

[1] *Source: AASHTO, 2020*

Table K.2 – Federal Discretionary Grant Programs for Highway Projects

PROGRAM NAME	ELIGIBLE PROJECTS	NATIONAL FUNDING AMOUNT	TYPICAL PROJECT AWARD	FUNDING FOR KENTUCKY SINCE FAST ACT
USDOT Rebuilding American Infrastructure with Sustainability and Equity (RAISE) grant program	Capital costs of road, rail, transit, and port projects that have a significant impact on the nation, a region, or a metropolitan area	$1B in FY21 awards	Max award in FY21 = $25M	$150 M for 11 projects since FY16
USDOT Infrastructure for Rebuilding America (INFRA) grant program	Incentivizes project sponsors to incorporate innovative technologies project delivery strategies for major highway, bridge, port or rail projects	$1B in FY21 awards	$6.1 M to $135 M (FY20)	$123 M for 2 projects since FY16
FHWA Advanced Transportation and Congestion Management Technologies Deployment (ATCMTD) program	Development of model deployment sites for large scale installation and operation of advanced transportation technologies	$60 M in FY21 awards	Max award in FY21 = $12M	None to date
FHWA Accelerated Innovation Deployment (AID) Demonstration program	Incentives accelerated use of innovation in highway transportation projects	Approx. $10 M in FY21 awards	Max award in FY21 = $1M	$3 M for 3 projects since FY16

The RAISE grant program (previously known as Better Utilizing Investments to Leverage Development (BUILD) and Transportation Investment Generating Economic Recovery (TIGER)) is a highly competitive USDOT grant program that supports the capital costs of road, rail, transit, and port projects that have a significant impact on the nation, a region, or a metropolitan area. Funding from this program is eligible for planning, design, and construction phases. From this program in 2020, three projects in Kentucky — the KY 536 Improvement Program Priority Section 1 project in Kenton County, the US 79 Bridge Replacement project in Todd County, and the US 25W Widening and Access Improvements project in the City of Corbin — were awarded $9.64 million, $13.5 million, and $15.1 million, respectively. Kentucky has been successful in securing BUILD/TIGER program funds almost every year since the establishment of the program in the American Recovery and Reinvestment Act of 2009, particularly in recent cycles receiving $60 million, $30 million, and $38 million for three projects in FY 18, 19, and 20, respectively. Furthermore, the RAISE/BUILD/TIGER program can be highly competitive, and KYTC would need to determine the highest priority project(s) and/or the project(s) most in alignment with the program's merit criteria to position for these funds since most states receive only one grant each year. If the applications were successful, the RAISE contribution to the full SWCP program of projects would be a small share of the overall cost but could provide needed federal funds to the program in the near term and substantial funds to an individual project within the program.

Discretionary INFRA grants help to fund major highway, bridge, port, and railroad projects across the nation. The program aims to leverage federal grant funding to incentivize project sponsors to incorporate innovative technologies and project delivery strategies, including P3s. In 2020, the program awarded $55.2 million to KYTC to widen 11 miles of the Mountain Parkway from two to four lanes between the KY 191 overpass and the KY 205 interchange. And in 2018, KYTC received $67.5 million for the Boone County I-71/I-75 Interchanges project. INFRA grants are intended to provide funding to projects that are "shovel ready" and result in construction. Due to the competitive nature of discretionary grant programs, a grant under the INFRA program or its successor is more likely to provide funding for the construction phase of the SWCP.

The ATCMTD program funds development of model deployment sites for large scale installation and operation of advanced transportation technologies, including applications in advanced travel data, infrastructure management, safety, electronic pricing, advanced public transport systems. These projects seek to improve safety, efficiency, system performance, and infrastructure return on investment. KYTC submitted an application to this program in FY 2019 for approximately $5.3 million for the Connection 21 project – Louisville's Strategy to Improve Integrated Corridor Management for a 21st Century Transportation Network – but was not awarded a grant.

The AID Demonstration program seeks to incentivize accelerated use of innovation in highway transportation projects and must include some proven highway transportation application not routinely used by the applicant of these funds. Throughout the course of this program, KYTC has received three grant awards of $1 million each for an Intelligent Compaction Project across five Kentucky counties, a Roundabout Installation in London, KY, and the Kentucky Automated Traffic Signal Performance Measures Corridor Projects on US 231 and the Richmond Bypass.

Grant funding is uncertain, and while it is a potential source of project funding for the SWCP program, it can't be definitively relied upon. Additionally, Kentucky has been particularly successful in obtaining federal discretionary grants for transportation projects since 2017; however, it is possible that with the appointment of a new transportation secretary under the Biden Administration that this upward trend may not continue.

K.1.2 STATE FUNDING SOURCES

Large and transformative transportation infrastructure projects like those in the SWCP necessitate funding from a variety of sources. Securing broad-based commitments at the state and regional levels provides an important funding source and serves as a valuable asset for competing for the federal funding programs described above. This section details existing and potential future state funding streams in Kentucky that could be used to fund all or elements of the SWCP.

Revenue from the Kentucky Road Fund provides the majority of state revenues for highway projects throughout the state. KYTC's annual revenue projections amount to approximately $1.5 billion per year coming from receipts from motor vehicle usage taxes, vehicle and boat registration fees, motor vehicle operator's license fees, state motor fuel taxes, tolls, and interest income. Usage of these funds are restricted by the Kentucky Constitution (Section 230) and state law (Chapter 48 of the Kentucky Revised Statues) for the administration, maintenance, construction, operation, and traffic enforcement of public highways and bridges.

In recent history, the tax base supporting the Kentucky Road Fund has been and will continue to be insufficient to fund the transportation needs throughout the state. Similar to the insolvency of the federal Highway Trust Fund, traditional motor vehicle fuel taxes have not been able to keep pace with the growing infrastructure needs and new transportation technologies. The following state funding sources outlined in this section can help to fill in this funding gap and deliver the full extent of the SWCP, if they could be expanded to cover the projected Kentucky Road Fund shortfalls. Kentucky's legislature has introduced bills under bipartisan leadership in the past that have proposed to change or adjust the methods in which most state highway funding is collected in the state of Kentucky to address these issues; however, major state transportation funding legislation has not been passed.

K.1.2.1 Motor Fuel Tax

Fuel taxes are the most fundamental and popular way of generating transportation revenues in the United States. This is in large part because they amount to a user fee associated with transportation infrastructure like roadways, since they are only paid if a vehicle is used. Motor fuel taxes represent more than 50% of Kentucky Road Fund revenues, or approximately $760 million annually over the last decade. State motor fuel taxes in Kentucky are levied on gasoline and diesel fuel sold for use in motor vehicles operated on public highways. Fuel tax revenues

over the past 20 years have been generally flat. Between 2012 and 2018, the compound annual growth rate of gasoline and diesel fuel collections was less than one percent. Fuel tax revenues increased from 2009 to 2014 following the 'Great Recession' but have trended downward since a peak in 2014. Updated numbers for 2020 are expected to reflect an even greater decrease due to the impacts of COVID-19. Furthermore, market factors such as changing transportation mode choices and increasing fuel efficiency may dampen expected future revenues. Motor fuel taxes come in both fixed-rate and variable-rate forms. Kentucky state law (Chapter 138 of the Kentucky Revised Statues) sets a variable tax rate of roughly 9% on the average wholesale price (AWP) of gasoline, which is replaced with a statutory floor set by the General Assembly if the AWP dips below $2.177 per gallon. The tax is reassessed each quarter and can never increase by more than 10%. As of 2020, state fuel taxes in Kentucky amounted to $0.26 per gallon of gasoline and $0.23 per gallon of diesel fuel.

An additional fixed rate of $0.05 per gallon of gasoline and $0.02 per gallon for special fuels is also levied. Businesses operating commercial trucking services on public highways in Kentucky are assessed surtaxes on both the variable (2% of AWP for gasoline and 4.7% of AWP on special fuels) and fixed fuel taxes ($0.0435 per gallon for gasoline and $0.1023 per gallon for special fuels). Neither the fixed- or variable-rate forms of Kentucky's state motor fuel tax is indexed to inflation, which could be a way to avoid future hikes.

Previously introduced bills have proposed to simplify the excise tax on gasoline and special fuels and set its initial rate at $0.34 per gallon while allowing it to change on an annual basis in coordination with the National Highway Construction Cost Index 2.0. The motor fuel tax increase included in a proposal like this could generate between $200 and $300 million per year[2] for the Kentucky Road Fund, a portion of which could aid in the delivery of SWCP projects.

Another potential means of increasing revenues from motor fuel tax sales is to remove the state sales tax exemption on motor fuels. Kentucky levies a 6% sales tax on goods and services throughout the state, but motor fuel products enjoy an exemption to this tax. Nine states in the U.S. have motor fuel sales taxes, most of which are of similar magnitude to the six percent that Kentucky could charge. This change could potentially result in additional revenues of $200 to $400 million per year[3]. A proposal to remove the sales tax exemption on motor fuels has not been broached by the state legislature in recent years.

Table K.3 – Kentucky Motor Fuel Tax Revenue Summary

REVENUE SOURCE	EXISTING ANNUAL ROAD FUNDING (FY 2020-21)	REVENUE TREND	POTENTIAL ADDITIONAL FUNDING UNDER NEW LEGISLATION/PROGRAM
Motor Fuel Tax	$760 M	Decreasing	Fuel tax increases outlined in previous proposed legislation = $200 - $300 M per year
			Removing sales tax exemption on fuels = $200 - $400 M per year

[2] *High-level estimate based on 8-cent (30.8%) increase in motor fuel tax compared to existing projected motor fuel tax revenues. (Source: historical data and trends presented in Kentucky's FY 2020-2026 Highway Plan (KYTC, 2020), Kentucky's Long-Range Statewide Transportation Plan (KYTC, 2014), and Transportation Infrastructure Funding Assessment and Economic Impact Analysis for the Commonwealth of Kentucky (Kentucky Infrastructure Coalition, 2017))*

[3] *High-level estimate based on levying a 6% sales tax on the average 2019 wholesale price of gasoline in Kentucky ($1.775 per gallon, according to the U.S. Energy Information Administration) applied to the total gallons of motor fuel purchased in the state of Kentucky in 2019. Note that this estimate does not include potential impacts of consumer demand elasticity.*

K.1.2.2 Vehicle Usage Taxes and Fees

Kentucky levies a six percent tax on the state-assessed retail prices of a vehicle upon transfer of vehicle ownership or when a vehicle is offered for registration for the first time in Kentucky. This tax accounted for approximately thirty percent of Road Fund revenues over the last decade, or approximately $425 million on average each year. Unlike the fuel tax, revenues from vehicle usage tax have been increasing since the rebound following the 'Great Recession' – the compound annual growth rate between 2012 and 2018 was 3.5%.

A Kentucky House Bill introduced in 2019 sought to raise the vehicle usage tax to eight percent, but this bill was withdrawn in January 2020. An additional two percent tax could generate between $100 and $200 million each year[4].

Kentucky also taxes commercial carriers that travel on Kentucky roadways with a combined license weight at or above 60,000 pounds a rate of 2.85 cents per mile. This generates approximately $70 million per year and comprises about 5% of overall Kentucky Road Fund revenues.

Table K.4 – Kentucky Vehicle Usage and Fees Revenue Summary

REVENUE SOURCE	EXISTING ANNUAL ROAD FUNDING (FY 2020-21)	REVENUE TREND	POTENTIAL ADDITIONAL FUNDING UNDER NEW LEGISLATION/PROGRAM
Vehicle Usage Taxes	$420 M	Increasing	Vehicle usage tax increase outlined in previous proposed legislation = $100 - $200 M per year
Commercial Carrier Weight-Mile Fees	$70 M	Flat	None

K.1.2.3 Motor Vehicle Property Taxes and Vehicle Registration + Licensing Fees

Fees related to motor vehicle registration, operation, and licensing are also a popular means of generating transportation revenues in the United States, including Kentucky. Vehicle registration and licensing fees and motor vehicle property taxes amount to just over 15% of Road Fund revenues, or approximately $235 million per year on average over the last decade. Revenues from these other taxes and fees have increased modestly since the rebound following the 'Great Recession' – the compound annual growth rate between 2012 and 2018 was 1.0%.

In the context of statewide transportation funding, Kentucky levies a property tax on motor vehicles. The Motor Vehicle Property Tax (MVPT) is an annual tax assessed on motor vehicles and motor boats. As of 2020, the state MVPT rate for non-historic vehicles is 45 cents per $100 of value. As mentioned previously in the Motor Fuel Taxes section, previously introduced legislation sought to increase vehicle registration fees for passenger vehicles from $11.50 to $22 per along with an additional electric vehicle highway user fee of $150 to be paid annually. This legislation also sought to introduce a $35-40 annual highway preservation fee on noncommercial vehicles with a fuel efficiency of 30 mpg or greater. These increases could result in between $25 and $50 million in additional revenues for the Road Fund each year[5]. Registration fees are not linked to inflation.

[4] *High-level estimate based on an increasing the vehicle usage tax from 6 to 8 % on projected vehicle transfers and purchases for 2021. (Source: historical data and trends presented in Kentucky's FY 2020-2026 Highway Plan (KYTC, 2020), Kentucky's Long-Range Statewide Transportation Plan (KYTC, 2014), and Transportation Infrastructure Funding Assessment and Economic Impact Analysis for the Commonwealth of Kentucky (Kentucky Infrastructure Coalition, 2017))*

[5] *High-level estimate based on 90% increase in passenger car registration revenue compared to existing projected passenger car registration revenues for 2021. (Source: historical data and trends presented in Kentucky's FY 2020-2026 Highway Plan (KYTC, 2020), Kentucky's Long-Range Statewide Transportation Plan (KYTC, 2014), and Transportation Infrastructure Funding Assessment and Economic Impact Analysis for the Commonwealth of Kentucky (Kentucky Infrastructure Coalition, 2017))*

Table K.5 – Kentucky Motor Vehicle Property Taxes and Vehicle Registration + Licensing Fees Revenue Summary

REVENUE SOURCE	EXISTING ANNUAL ROAD FUNDING (FY 2020-21)	REVENUE TREND	POTENTIAL ADDITIONAL FUNDING UNDER NEW LEGISLATION/PROGRAM
Passenger Car Registration + Motor Vehicle Property Tax (MVPT)	$80 M	Flat	Registration increase outlined in previous proposed legislation = $25 - $50 M per year
Heavy Truck Registration	$63 M	Flat	None
Motor Vehicle Operator's Licenses	$16 M	Decreasing	None

K.1.2.4 Business Improvement District Tax

A business improvement district (BID) tax allows businesses to be directly taxed for the purposes of improvements for which they will see a direct or indirect benefit. BIDs apply an additional supplement to local taxes related to business property to fund local improvements. Widely used in the United States, some cities have expanded these policies to fund large-scale infrastructure projects. Louisville and Lexington both have BIDs in their downtown area to fund local improvements, including transportation projects. These funds could potentially provide limited supplemental funding to SWCP projects in these areas, or new districts could be introduced with that purpose in mind.

Table K.6 – Kentucky Business Improvement District Tax Revenue Summary

REVENUE SOURCE	EXISTING ANNUAL ROAD FUNDING (FY 2020-21)	REVENUE TREND	POTENTIAL ADDITIONAL FUNDING UNDER NEW LEGISLATION/PROGRAM
Business Improvement District (BID) Tax	None	n/a	Relatively small local contribution

K.1.2.5 Payroll or Commuter Tax

A payroll tax (local income tax) is a tax withheld from an employee's salary by an employer who remits it to the government on their behalf. Small employers (less than 10 to 50 employees) are typically exempt or pay a reduced rate. These taxes can apply to a subset of employees in a jurisdiction. Commuter taxes, for example, are payroll income taxes or other fees paid by people employed in, but not residing in, a given jurisdiction. The theory is that those who work in, but live outside, a particular area benefit from the infrastructure and services of their work jurisdiction but only pay taxes in their home jurisdiction. They have been used by some cities in the United States to help offset the cost of infrastructure and services used regularly by non-residents. To create a commuter tax, legislative approval is required through the local government. The Louisville Metro jurisdiction in Kentucky levies a 1.45% rate on those who work in the metro limits but live outside of them. These funds could potentially provide limited supplemental funding to SWCP projects in Louisville.

Table K.7 – Kentucky Payroll or Commuter Tax Revenue Summary

REVENUE SOURCE	EXISTING ANNUAL ROAD FUNDING (FY 2020-21)	REVENUE TREND	POTENTIAL ADDITIONAL FUNDING UNDER NEW LEGISLATION/PROGRAM
Payroll or Commuter Tax	None	n/a	Relatively small local contribution

K.1.2.6 Highway Tolls

Highway tolls are a direct user fee for use of a highway. Tolls generally support the capital, operating, and debt service cost of the tolled facility, but sometimes fund other transportation projects and services as well. Tolling is a way to close funding gaps for transportation projects and can support P3s and leverage new sources of capital. Kentucky has used highway tolls to finance the construction of their turnpike and parkway system historically, but tolls on these facilities have all since been removed as of 2006. However, Kentucky has demonstrated recent and existing success with new tolling. Most of the projects in the SWCP involve improving existing arterial or collector roadways, rather than along limited access freeways or new roadways where this type of user fee would be more practical to levy.

Table K.8 – Kentucky Highway Tolling Revenue Summary

REVENUE SOURCE	EXISTING ANNUAL ROAD FUNDING (FY 2020-21)	REVENUE TREND	POTENTIAL ADDITIONAL FUNDING UNDER NEW LEGISLATION/PROGRAM
Highway Tolling	None	n/a	None

K.1.2.7 Road Usage Charging

Citing the instability, inequity, and unsustainability of traditional transportation funding mechanisms (e.g., gas taxes, licensing fees, etc.), several states have contemplated implementing alternative ways to collect revenues to build and maintain transportation infrastructure. In 2015, Oregon was the first state to implement a road usage charging (RUC) pilot project called OReGO, which is a voluntary per-mile charging system whereby participants pay for miles they drive rather than annual registration fees based on the fuel efficiency of their vehicle. As of January 2020, drivers of electric and high-mpg vehicles (40 mpg or better) can voluntarily enroll in Oregon's road usage charge program in lieu of paying additional vehicle registration fees. Individuals enrolled in the program pay the RUC rate of 1.8 cents per mile instead. Additionally, owners of gasoline-powered vehicles receive fuel tax credits to rebate what they pay at the pump in terms of Oregon's 36-cent per gallon state gas tax. Similar systems have since been piloted in Utah, California, Washington, Colorado, Delaware, Minnesota, Pennsylvania, Hawaii, and Missouri. RUC would offer an alternative, and perhaps more sustainable and equitable transportation funding source in the future; however, since it would replace existing sources of revenue (e.g., state gas taxes and/or vehicle registration fees) it should not be viewed as a sizeable new funding source.

Table K.9 – Kentucky Road Usage Charing Revenue Summary

REVENUE SOURCE	EXISTING ANNUAL ROAD FUNDING (FY 2020-21)	REVENUE TREND	POTENTIAL ADDITIONAL FUNDING UNDER NEW LEGISLATION/PROGRAM
Road Usage Charging (RUC)	None	Does not exist in KY	Can provide user fee to replace fuel taxes and/or registration fees

K.1.2.8 Other Miscellaneous Taxes and Fees

The following taxes, fees, and other revenue sources are not currently used for transportation purposes in Kentucky, but have been leveraged to support transportation infrastructure construction, operations, and maintenance in other states. Overall, while these funding streams could be applied toward delivering the SWCP, they are small relative to the other funding streams outlined above.

- Sales tax on car rentals
- Lottery revenues

- Cigarette tax
- New bicycle purchase tax
- Customer utility bill levy

K.1.3 ALTERNATIVE FUNDING SOURCES AND DELIVERY OPTIONS

In recognition of deficiencies in traditional State Road Fund and Federal Highway Trust Fund as sources of future funding, the Kentucky General Assembly has tasked KYTC with evaluating alternative delivery options for infrastructure projects including design-build contracts and the establishment of an infrastructure/construction authority.

KYTC has leveraged cost savings and synergies involved with design-build contracting to deliver several large transportation infrastructure undertakings in the last decade. For example, the Bridging Kentucky program has rehabilitated, repaired, or replaced more than 240 critical structures. Cost savings associated with this program allowed KYTC to advance 120 additional bridge projects across the state. Employing best practices and lessons learned from KYTC's experience with this delivery method may help to deliver the SWCP in an expedient and affordable manner.

In 2009, the Kentucky General Assembly established the Kentucky Public Transportation Infrastructure Authority (KPTIA) to address the unique funding requirements of large, complex highway projects within the Commonwealth and between Kentucky and Indiana. KPTIA can sell revenue bonds that are to be repaid with revenues derived from completed projects, most likely from user fees such as tolls. KPTIA's first endeavor was a bi-state project with the state of Indiana to develop and construct two new Ohio River bridges and to re-configure the complex junction of I-65, I-64 and I-71 in downtown Louisville. The Kentucky portion of the Louisville/Southern Indiana Ohio River Bridges (LSIORB) project was financed through a combination of traditional federal funds and innovative financing methods including Grant Anticipation Revenue Vehicle (GARVEE) bonds, a Transportation Infrastructure Finance and Innovation Act (TIFIA) loan from U.S. Department of Transportation and revenue bonds to be repaid through tolls collected from users of these new facilities. The Ohio River Bridges are operated as toll roads (I-65, I-64, and the new I-265 East End Bridge). The KPTIA is designed to help deliver large, complex projects that involve a user fee-based revenue source, like tolls, so this entity would likely only be used in a very limited capacity to deliver SWCP projects, if at all. Furthermore, Kentucky legislation from 2016 prevents tolling federal interstate highways connecting Kentucky and Ohio.

K.2 HIGH-LEVEL FISCAL ANALYSIS

Based on existing and potential future funding scenarios, this section provides a high-level analysis of SWCP infrastructure demand and costs. Demand is based on the composite rankings generated in Tier 2 analysis (see Section 6.5.2). The primary purpose of this section is to understand the range of possible improvements that could be made over time with expected funding levels, increases in funding from existing programs, and new programs. Three funding scenarios are presented – 1) Low, 2) Medium, and 3) High – which are described in more detail below in the Assumptions and Methodology sub-section. In each of these funding scenarios, the excel-based fiscal analysis model helps generate a list of SWCP projects that could be delivered in the Intermediate (before 2030) and Long-Range (between 2031 and 2045) timeframes based on a combination of their composite rank and spatial location within the state, while considering each project's estimated costs and delivery timeframes. These results are presented in the Intermediate (2030) and Long-Range (2045) Plan section below.

The input values and results of this analysis are intended to present sketch-level planning findings. Estimated project delivery costs could vary -50% to +250% of the actual values. It is important to note that more detailed civil cost estimates and financial analysis should be completed to deliver the SWCP capital program over the next 25 years.

K.2.1 ASSUMPTIONS & DATA

K.2.1.1 Funding Sources

SWCP projects will be supported by a combination of state and federal funding options, the magnitude of which are largely unknown at this time due to pending legislation at both the state and national levels and revenue trends throughout the economy's recovery from the COVID-19 pandemic. To provide a high-level estimate of funding levels that would support SWCP projects, estimated levels of funding to support the SWCP are derived from past expenditures on highway construction projects as is shown in **Table K.10**. The medium funding scenario mimics an 'existing conditions' scenario and projects similar levels of funding for these types of projects to that of what has been spent in recent years. The low funding scenario provides the most fiscally conservative estimate of funding to support SWCP projects given trends in declining state road fund revenue and the expiration of state toll credits previously used as a match to federal aid highway funds. Lastly, the high funding scenario assumes additional or new revenue sources available to support SWCP projects (e.g., new state funding or increases of federal funding levels as a result of a new surface transportation bill). Approximately $150 million, $295 million, and $440 million (YOE$) per year are projected in a flatline format as annual funding support for SWCP projects between 2021 and 2045 for the low, medium, and high funding scenarios, respectively. These values are based on 20% (low), 40% (medium), and 60% (high) of total combined state and federal funding levels for highway construction projects in FY 2021, as seen below in **Table K.10**.

Table K.10 – Funding Scenarios to Support SWCP (Millions of Year of Expenditure Dollars)

		FY 2020	FY 2021	FY 2022 & BEYOND (FLATLINE)
State Funding Expenditures for Construction		$333.4	$356.1	$356.1
Federal Funding Expenditures for Construction		$376.2	$381.1	$381.1
Total Funding for State Highway Plan Construction		$709.6	$737.2	$737.2
Estimate of Annual Funding Available for SWCP Projects	**Low Funding Scenario**	$141.9	$147.4	**$147.4**
	Medium Funding Scenario	$283.8	$294.9	**$294.9**
	High Funding Scenario	$425.8	$442.3	**$442.3**

Source: KYTC Spending by Allotment FY16 – FY21

K.2.1.2 Expenditures

Estimates for SWCP projects' costs and delivery timeframes are detailed in Tier 2 analysis (see **Section 6.4.1** and **6.4.2**). These inputs for the 45 Tier 2 SWCP corridors are summarized in **Table K.11**. All the cost and delivery time estimates are preliminary in nature. For major projects often a utility relocation limitation will impact the delivery timeline, for example. The cost values are shown in 2020$s in **Table K.11**, but the fiscal analysis model escalates these values to YOE$ values using a standard inflation factor of 2.5% based on their projected start date and delivery timeline, which vary in each funding scenario.

Table K.11 – Tier 2 SWCP Corridors Estimated Project Costs and Delivery Timeframes

TIER 2 SWCP CORRIDORS	DELIVERY TIME (YEARS)	ESTIMATED PROJECT COSTS BY CATEGORY (IN MILLIONS OF 2020$S)			
		DESIGN	ROW	UTILITY	CONSTRUCTION
4A - KY 4 from Richmond Rd (US 25/421) to Newtown Pike (KY 922)	10 - 15	34.3	99.4	24.2	223.8
4B - KY 4 from Newtown Pike to US 25	10 - 15	18.2	63.6	14.7	136.2
5 - Man O' War Blvd. from US 60W to I-75	20	49.2	176.1	40.7	327.5
6A - US 60 from I-64 to KY 1848	10 - 15	23.1	83.0	19.2	153.7
6B - US 60 from KY 1848 to US 62	5 - 10	21.4	77.2	17.8	142.5
6C - US 60 from US 62 to I-75	10 - 15	37.0	112.5	25.6	273.9
9 - KY 9 (AA Highway) from I-275 to I-64	5 - 10	18.5	49.7	11.4	149.3
10 - KY 100/US 79 from Tennessee State Line to I-65	10 - 15	6.3	3.8	3.4	37.0
12 - KY 922 from Broadway (US 68) to I-64/I-75	10 - 15	20.3	66.2	15.8	134.0
15 - KY 15 from Campton to Whitesburg	10 - 15	2.7	3.9	2.7	26.5
18A - US 31W & KY 61 from Columbia to I-65	10 - 15	0.2	0.4	0.6	8.0
18B - US 31W/KY 9001 from I-65 to I-265	20	43.5	32.6	20.9	249.5
18C - US 31W & KY 61 from Snyder Frwy (I-265) to I-64	5 - 10	15.5	56.9	12.9	103.5
19 - US 199/US 25E/US 23 from I-75 to West Virginia State Line	10 - 15	6.0	8.5	6.0	59.5
23 - US 23 from Ohio State Line to US 199	10 - 15	14.3	12.5	12.4	149.6
27A - US 27 from Main St. (US 421) to US 27/US 68 Split in Paris	5 - 10	7.2	26.4	6.0	48.0
27B - US 27 from US 27/US 68 Split in Paris to KY 9	10 - 15	7.5	21.2	4.6	62.0
27C - US 27 from KY 9 (AA Highway) to Ohio State Line	10 - 15	20.3	73.0	16.9	135.5
28A - US 68 from Man O' War Blvd. to I-54/I-75 Interchange	10 - 15	19.3	70.5	16.5	128.8
28B - US 68 from I-64/I-75 to Ohio State Line	5 - 10	3.0	11.0	2.5	20.0
30A - US 27 from Tennessee State Line to US 27 Bypass	10 - 15	12.9	40.7	13.2	128.5
30B - US 27 from US 27 BYP to US 421	10 - 15	22.7	76.3	17.4	162.0
31A - US 31E/US 150 from Bluegrass Pkwy to I-265	10 - 15	19.2	40.6	11.1	165.7
31B - US 31E/US 150 from I-265 in Louisville to Indiana State Line	10 - 15	-	-	-	-
32 - KY 11/KY 32/US 460 from AA Highway to US 23	10 - 15	8.4	7.2	6.5	77.0
33A - US 127 from Tennessee State Line to I-64	5 - 10	10.9	36.4	8.5	83.0
33B - US 127 from I-64 to I-71	5 - 10	2.0	7.2	1.6	13.0

TIER 2 SWCP CORRIDORS	DELIVERY TIME (YEARS)	ESTIMATED PROJECT COSTS BY CATEGORY (IN MILLIONS OF 2020$S)			
		DESIGN	ROW	UTILITY	CONSTRUCTION
35A - US 127 from Tennessee State Line to Natcher Pkwy	5 - 10	1.6	1.1	1.0	12.8
35B - US 231 from Natcher Pkwy to US 68	10 - 15	8.5	8.9	7.3	83.3
36A - KY 536 from US 42 to KY 17	10 - 15	8.7	18.1	4.0	74.1
36B - KY 536 from KY 17 to US 27	10 - 15	2.3	7.5	1.7	15.5
38 - US 431 from Tennessee State Line to US 60	5 - 10	0.8	1.3	1.8	26.0
39 - KY 100/US 31E/KY 90 from I-65 Exit 6 to US 27	5 - 10	3.1	2.1	1.7	24.4
40 - US 641 from Tennessee State Line to US 60	5 - 10	11.7	8.8	8.0	92.5
41A - US 421 from US 27 to KY 341	10 - 15	18.7	51.8	11.5	151.4
41B - US 421 from KY 341 to Indiana State Line	5 - 10	6.1	22.3	5.1	40.5
42A - US 421 from Virginia State Line to I-75	10 - 15	9.9	30.2	8.6	70.5
42B - US 421/KY 418 from I-75 to US 27	10 - 15	17.8	63.8	14.8	118.6
44A - KY 44 from I-65 to KY 1319	10 - 15	26.4	46.4	10.1	175.7
44B - KY 44 from KY 1319 to KY 55	10 - 15	8.8	14.4	2.9	67.5
46A - KY 245 from I-65 to Bluegrass Parkway	5 - 10	6.3	5.6	3.1	44.8
46B - KY 245/US 150 from Bluegrass Pkwy To I-75	5 - 10	2.3	7.2	2.2	24.0
50A - US 60 from Illinois State Line to KY 425 BYP	5 - 10	2.2	4.0	5.8	80.0
50B - US 60 from KY 425 Bypass to Natcher Parkway	5 - 10	0.6	1.2	1.8	24.0
50C - US 60 from Natcher Pkwy to US 31W	5 - 10	0.5	0.8	1.0	16.0

K.2.1.3 Project Demand

Project demand corresponds with the composite rankings presented for the 45 Tier 2 SWCP corridors in **Section 6.5.2**. These rankings along with the project's spatial location by KYTC SHIFT Region is depicted in **Table K.12**.

Table K.12 – Tier 2 SWCP Composite Rankings and Locations

TIER 2 SWCP CORRIDORS	COMPOSITE RANK	KYTC SHIFT REGION			
		NORTH	SOUTH	EAST	WEST
18B - US 31W / KY 9001 from I-65 to I-265	1	x	x		
6C - US 60 from US 62 to I-75	2	x			
4B - KY 4 from Newtown Pike to US 25	3	x			
36A - KY 536 from US 42 to KY 17	4	x			
31B - US 31E/US 150 from I-265 in Louisville to Indiana State Line	5	x			
4A - KY 4 from Richmond Rd (US 25/421) to Newtown Pike (KY 922)	6	x			
41A - US 421 from US 27 to KY 341	7	x			
44B - KY 44 from KY 1319 to KY 55	8	x			

TIER 2 SWCP CORRIDORS	COMPOSITE RANK	KYTC SHIFT REGION			
		NORTH	SOUTH	EAST	WEST
5 - Man O' War Blvd. from US 60W to I-75	9	x			
50B - US 60 from KY 425 Bypass to Natcher Parkway	10				x
35B - US 231 from Natcher Pkwy to US 68	11				x
30A - US 27 from Tennessee State Line to US 27 Bypass	12	x	x		
46B - KY 245/US 150 from Bluegrass Pkwy to I-75	13	x	x		
31A - US 31E/US 150 from Bluegrass Pkwy to I-265	14	x	x		
18C - US 31W & KY 61 from Snyder Frwy (I-265) to I-64	15	x			
6B - US 60 from KY 1848 to US 62	16	x			
23 - US 23 from Ohio State Line to US 199	17			x	
38 - US 431 from Tennessee State Line to US 60	18				x
9 - KY 9 (AA Highway) from I-275 to I-64	19	x		x	
39 - KY 100/US 31E/KY 90 from I-65 Exit 6 to US 27	20		x		x
35A - US 127 from Tennessee State Line to Natcher Pkwy	21				x
6A - US 60 from I-64 to KY 1848	22	x			
30B - US 27 from US 27 BYP to US 421	23	x			
27C - US 27 from KY 9 (AA Highway) to Ohio State Line	24	x			
46A - KY 245 from I-65 to Bluegrass Parkway	25	x	x		
32 - KY 11/KY 32/US 460 from AA Highway to US 23	26			x	
44A - KY 44 from I-65 to KY 1319	27	x			
28A - US 68 from Man O' War Blvd. to I-54/I-75 Interchange	28	x			
42B - US 421/KY 418 from I-75 to US 27	29	x			
19 - US 199/US 25E/US 23 from I-75 to West Virginia State Line	30		x	x	
27A - US 27 from Main St. (US 421) to US 27/US 68 Split in Paris	31	x			
27B - US 27 from US 27/US 68 Split in Paris to KY 9	32	x			
50A - US 60 from Illinois State Line to KY 425 BYP	33				x
15 - KY 15 from Campton to Whitesburg	34			x	
33B - US 127 from I-64 to I-71	35	x			
33A - US 127 from Tennessee State Line to I-64	36	x	x		
41B - US 421 from KY 341 to Indiana State Line	37	x			
18A - US 31W & KY 61 from Columbia to I-65	38		x		
36B - KY 536 from KY 17 to US 27	39	x			
40 - US 641 from Tennessee State Line to US 60	40				x
42A - US 421 from Virginia State Line to I-75	41	x	x		
12 - KY 922 from Broadway (US 68) to I-64/I-75	42	x			
50C - US 60 from Natcher Pkwy to US 31W	43		x		x
10 - KY 100/US 79 from Tennessee State Line to I-65	44				x
28B - US 68 from I-64/I-75 to Ohio State Line	45	x		x	

K.2.2 METHODOLOGY

For each funding scenario, the fiscal analysis model computes the most expedient and cost-effective way to construct the maximum number of SWCP projects during the analysis period. The selected program of projects must be delivered with the projected funding amounts in each scenario without incurring an overall negative cash balance during the analysis period of 2021-2045[6]. This analysis does not consider bond financing as a method of delivering these projects. In the low and medium funding scenarios where funding constraints prevent completion of all 45 Tier 2 SWCP corridors before 2045, the model seeks to deliver the projects in priority order of their composite ranks, but while also ensuring that funded projects are spread throughout the state (in both the immediate and long-term timeframes). In these scenarios, smaller projects that could be delivered with remaining funds are included as well, even though they may have lower composite rankings than larger projects that cannot be delivered during the analysis period.

K.3 INTERMEDIATE (2030) AND LONG-RANGE (2045) PLAN

The results of the fiscal analysis culminate in a list of SWCP projects that – given the above described assumptions and data -- could be delivered in the intermediate (before 2030) and long-range (between 2031 and 2045) timeframes. The following describe the high-level takeaways from each funding scenario:

- The ***high*** funding scenario represents a best-case scenario whereby all the 45 Tier 2 SWCP corridors are delivered in the most expedient time schedule with no budgetary constraints. Ten of the projects are projected to be delivered in the intermediate timeframe. This scenario would have funding leftover to support additional Tier 2 SWCP projects or other agency needs during the analysis period starting immediately.
- The ***medium*** funding scenario resembles existing conditions in which 29 of the 45 Tier 2 SWCP corridors could be delivered during the analysis period. Like the high funding scenario, ten of the corridors could be delivered in the intermediate timeframe. Given the funding constraints, 16 of the 45 projects cannot be delivered until after 2045.
- The ***low*** funding scenario results in the delivery of 14 of the 45 Tier 2 SWCP projects, two of which could be delivered in the intermediate timeframe. The remainder of the projects cannot be delivered until after 2045 given the funding constraints.

Since these projects are in an early stage of design and estimated project delivery costs could vary -50% to +250% of the actual values, the results presented in this section are preliminary and could be refined in concert with updated project cost estimates.

K.3.1 INTERMEDIATE SWCP

The only projects in the Tier 2 SWCP corridor list that could be delivered before 2030 are those that have a delivery timeframe of 5-10 years (see **Table K.11** above). The high and medium funding scenarios deliver all ten of these projects in the intermediate timeframe. These projects are spread across all four KYTC SHIFT regions. The low funding scenario achieves the delivery of two SWCP projects in the intermediate timeframe, which are spread across three of the four KYTC SHIFT regions. **Table K.13** summarizes the SWCP projects that could be delivered in the intermediate timeframe for each funding scenario.

[6] *SWCP Cash Fund balance graphs for each of the three funding scenarios are shown in the Attachment.*

Table K.13 – Tier 2 SWCP Projects Delivered in Intermediate Timeframe (prior to 2030) by Funding Scenario

INTERMEDIATE TIER 2 SWCP CORRIDORS	FUNDING SCENARIO:		
	LOW	MEDIUM	HIGH
50B - US 60 from KY 425 Bypass to Natcher Parkway	x	x	x
46B - KY 245/US 150 from Bluegrass Pkwy to I-75	x	x	x
18C - US 31W & KY 61 from Snyder Frwy (I-265) to I-64		x	x
6B - US 60 from KY 1848 to US 62		x	x
38 - US 431 from Tennessee State Line to US 60		x	x
9 - KY 9 (AA Highway) from I-275 to I-64		x	x
39 - KY 100/US 31E/KY 90 from I-65 Exit 6 to US 27		x	x
35A - US 127 from Tennessee State Line to Natcher Pkwy		x	x
46A - KY 245 from I-65 to Bluegrass Parkway		x	x
27A - US 27 from Main St. (US 421) to US 27/US 68 Split in Paris		x	x

K.3.2 LONG-RANGE SWCP

Most of the projects in the Tier 2 SWCP project list have estimated project durations of greater than 10 years and would be delivered in the long-range timeframe (between 2031 and 2045). The high funding scenario delivers the remainder of the 45 Tier 2 SWCP corridor projects in the long-range timeframe, whereas funding constraints prevent the low and medium funding scenarios from completing all these projects before 2045. All three funding scenarios achieve the delivery of Tier 2 SWCP projects in all four KYTC SHIFT regions in the long-range timeframe. **Table K.14** summarizes the Tier 2 SWCP projects that could be delivered in the long-term timeframe for each funding scenario.

Table K.14 – Tier 2 SWCP Projects Delivered in Long-term Timeframe (between 2031 and 2045) by Funding Scenario

LONG-RANGE TIER 2 SWCP CORRIDORS	FUNDING SCENARIO:		
	LOW	MEDIUM	HIGH
18B - US 31W/KY 9001 from I-65 to I-265	x	x	x
6C - US 60 from US 62 to I-75	x	x	x
4B - KY 4 from Newtown Pike to US 25	x	x	x
36A - KY 536 from US 42 to KY 17	x	x	x
31B - US 31E/US 150 from I-265 in Louisville to Indiana State Line	x	x	x
4A - KY 4 from Richmond Rd (US 25/421) to Newtown Pike (KY 922)	x	x	x
41A - US 421 from US 27 to KY 341	x	x	x
44B - KY 44 from KY 1319 to KY 55		x	x
5 - Man O' War Blvd. from US 60W to I-75		x	x
35B - US 231 from Natcher Pkwy to US 68	x	x	x
30A - US 27 from Tennessee State Line to US 27 Bypass	x	x	x
31A - US 31E/US 150 from Bluegrass Pkwy To I-265		x	x
23 - US 23 from Ohio State Line to US 199	x	x	x
9 - KY 9 (AA Highway) from I-275 to I-64	x	Completed before 2031	Completed before 2031
6A - US 60 from I-64 to KY 1848		x	x
30B - US 27 from US 27 BYP to US 421		x	x
27C - US 27 from KY 9 (AA Highway) to Ohio State Line		x	x
19 - US 199/US 25E/US 23 from I-75 to West Virginia State Line		x	x
27B - US 27 from US 27/US 68 Split in Paris to KY 9			x
50A - US 60 from Illinois State Line to KY 425 BYP			x
15 - KY 15 from Campton to Whitesburg			x
33B - US 127 from I-64 to I-71			x
33A - US 127 from Tennessee State Line to I-64			x
41B - US 421 from KY 341 to Indiana State Line			x
18A - US 31W & KY 61 from Columbia to I-65	x	x	x
36B - KY 536 from KY 17 to US 27			x
40 - US 641 from Tennessee State Line to US 60			x
42A - US 421 from Virginia State Line to I-75			x
12 - KY 922 from Broadway (US 68) to I-64/I-75			x
50C - US 60 from Natcher Pkwy to US 31W			x
10 - KY 100/US 79 from Tennessee State Line to I-65			x
28B - US 68 from I-64/I-75 to Ohio State Line			x

K.3.3 SWCP PROJECTS DELIVERED AFTER 2045

Given the fiscal constraints in the low and medium funding scenarios, several of the SWCP corridor projects cannot be delivered in either the intermediate or long-range timeframes. 31 SWCP corridor projects cannot be delivered until after 2045 in the low funding scenario while 16 of them cannot be delivered until after 2045 in the medium funding scenario. **Table K.15** summarizes these results.

Table K.15 – SWCP Projects that Cannot be Delivered Before 2045 by Funding Scenario

SWCP PROJECTS DELIVERED AFTER 2045	FUNDING SCENARIO:		
	LOW	MEDIUM	HIGH
44B - KY 44 from KY 1319 to KY 55	x	Completed before 2045	Completed before 2045
5 - Man O' War Blvd. from US 60W to I-75	x	Completed before 2045	Completed before 2045
31A - US 31E/US 150 from Bluegrass Pkwy to I-265	x	Completed before 2045	Completed before 2045
18C - US 31W & KY 61 from Snyder Frwy (I-265) to I-64	x	Completed before 2045	Completed before 2045
6B - US 60 from KY 1848 to US 62	x	Completed before 2045	Completed before 2045
38 - US 431 from Tennessee State Line to US 60	x	Completed before 2045	Completed before 2045
39 - KY 100/US 31E/KY 90 from I-65 Exit 6 to US 27	x	Completed before 2045	Completed before 2045
35A - US 127 from Tennessee State Line to Natcher Pkwy	x	Completed before 2045	Completed before 2045
6A - US 60 from I-64 to KY 1848	x	Completed before 2045	Completed before 2045
30B - US 27 from US 27 BYP to US 421	x	Completed before 2045	Completed before 2045
27C - US 27 from KY 9 (AA Highway) to Ohio State Line	x	Completed before 2045	Completed before 2045
46A - KY 245 from I-65 to Bluegrass Parkway	x	Completed before 2045	Completed before 2045
32 - KY 11/KY 32/US 460 from AA Highway to US 23	x	Completed before 2045	Completed before 2045
44A - KY 44 from I-65 to KY 1319	x	x	Completed before 2045
28A - US 68 from Man O' War Blvd. to I-54/I-75 Interchange	x	x	Completed before 2045
42B - US 421/KY 418 from I-75 to US 27	x	x	Completed before 2045
19 - US 199/US 25E/US 23 from I-75 to West Virginia State Line	x	Completed before 2045	Completed before 2045
27A - US 27 from Main St. (US 421) to US 27/US 68 Split in Paris	x	Completed before 2045	Completed before 2045
27B - US 27 from US 27/US 68 Split in Paris to KY 9	x	x	Completed before 2045
50A - US 60 from Illinois State Line to KY 425 BYP	x	x	Completed before 2045
15 - KY 15 from Campton to Whitesburg	x	x	Completed before 2045
33B - US 127 from I-64 to I-71	x	x	Completed before 2045
33A - US 127 from Tennessee State Line to I-64	x	x	Completed before 2045
41B - US 421 from KY 341 to Indiana State Line	x	x	Completed before 2045
36B - KY 536 from KY 17 to US 27	x	x	Completed before 2045

SWCP PROJECTS DELIVERED AFTER 2045	FUNDING SCENARIO:		
	LOW	MEDIUM	HIGH
40 - US 641 from Tennessee State Line to US 60	x	x	Completed before 2045
42A - US 421 from Virginia State Line to I-75	x	x	Completed before 2045
12 - KY 922 from Broadway (US 68) to I-64/I-75	x	x	Completed before 2045
50C - US 60 from Natcher Pkwy to US 31W	x	x	Completed before 2045
10 - KY 100/US 79 from Tennessee State Line to I-65	x	x	Completed before 2045
28B - US 68 from I-64/I-75 to Ohio State Line	x	x	Completed before 2045

K.3.4 SUMMARY

Table K.16 – Summary of All 45 Tier 2 SWCP Corridor Projects, Composite Rankings, Spatial Locations, and Delivery Timelines for Each Funding Scenario

TIER 2 SWCP CORRIDOR PROJECTS	COMPOSITE RANK	KYTC SHIFT REGION				FUNDING SCENARIO COMPLETION TIMEFRAME		
		NORTH	SOUTH	EAST	WEST	LOW	MEDIUM	HIGH
18B - US 31W/KY 9001 from I-65 to I-265	1	x	x			Long-Range	Long-Range	Long-Range
6C - US 60 from US 62 to I-75	2	x				Long-Range	Long-Range	Long-Range
4B - KY 4 from Newtown Pike to US 25	3	x				Long-Range	Long-Range	Long-Range
36A - KY 536 from US 42 to KY 17	4	x				Long-Range	Long-Range	Long-Range
31B - US 31E/US 150 from I-265 in Louisville to Indiana State Line	5	x				Long-Range	Long-Range	Long-Range
4A - KY 4 from Richmond Rd (US 25/421) to Newtown Pike (KY 922)	6	x				Long-Range	Long-Range	Long-Range
41A - US 421 from US 27 to KY 341	7	x				Long-Range	Long-Range	Long-Range
44B - KY 44 from KY 1319 to KY 55	8	x				After 2045	Long-Range	Long-Range
5 - Man O' War Blvd. from US 60W to I-75	9	x				After 2045	Long-Range	Long-Range
50B - US 60 from KY 425 Bypass to Natcher Parkway	10				x	Intermediate	Intermediate	Intermediate
35B - US 231 from Natcher Pkwy to US 68	11				x	Long-Range	Long-Range	Long-Range
30A - US 27 from Tennessee State Line to US 27 Bypass	12	x	x			Long-Range	Long-Range	Long-Range
46B - KY 245/US 150 from Bluegrass Pkwy to I-75	13	x	x			Intermediate	Intermediate	Intermediate
31A - US 31E/US 150 from Bluegrass Pkwy to I-265	14	x	x			After 2045	Long-Range	Long-Range
18C - US 31W & KY 61 from Snyder Frwy (I-265) to I-64	15	x				After 2045	Intermediate	Intermediate
6B - US 60 from KY 1848 to US 62	16	x				After 2045	Intermediate	Intermediate
23 - US 23 from Ohio State Line to US 199	17			x		Long-Range	Long-Range	Long-Range
38 - US 431 from Tennessee State Line to US 60	18				x	After 2045	Intermediate	Intermediate
9 - KY 9 (AA Highway) from I-275 to I-64	19	x		x		Long-Range	Intermediate	Intermediate
39 - KY 100 / US 31E /KY 90 from I-65 Exit 6 to US 27	20		x		x	After 2045	Intermediate	Intermediate
35A - US 127 from Tennessee State Line to Natcher Pkwy	21				x	After 2045	Intermediate	Intermediate

TIER 2 SWCP CORRIDOR PROJECTS	COMPOSITE RANK	KYTC SHIFT REGION				FUNDING SCENARIO COMPLETION TIMEFRAME		
		NORTH	SOUTH	EAST	WEST	LOW	MEDIUM	HIGH
6A - US 60 from I-64 to KY 1848	22	x				After 2045	Long-Range	Long-Range
30B - US 27 from US 27 BYP to US 421	23	x				After 2045	Long-Range	Long-Range
27C - US 27 from KY 9 (AA Highway) to Ohio State Line	24	x				After 2045	Long-Range	Long-Range
46A - KY 245 from I-65 to Bluegrass Parkway	25	x	x			After 2045	Intermediate	Intermediate
32 - KY 11/KY 32/US 460 from AA Highway to US 23	26			x		After 2045	Long-Range	Long-Range
44A - KY 44 from I-65 to KY 1319	27	x				After 2045	After 2045	Long-Range
28A - US 68 from Man O' War Blvd. to I-54/I-75 Interchange	28	x				After 2045	After 2045	Long-Range
42B - US 421/KY 418 from I-75 to US 27	29	x				After 2045	After 2045	Long-Range
19 - US 199/US 25E/US 23 from I-75 to West Virginia State Line	30		x	x		After 2045	Long-Range	Long-Range
27A - US 27 from Main St. (US 421) to US 27/ US 68 Split in Paris	31	x				After 2045	Intermediate	Intermediate
27B - US 27 from US 27/US 68 Split in Paris to KY 9	32	x				After 2045	After 2045	Long-Range
50A - US 60 from Illinois State Line to KY 425 BYP	33				x	After 2045	After 2045	Long-Range
15 - KY 15 from Campton to Whitesburg	34			x		After 2045	After 2045	Long-Range
33B - US 127 from I-64 to I-71	35	x				After 2045	After 2045	Long-Range
33A - US 127 from Tennessee State Line to I-64	36	x	x			After 2045	After 2045	Long-Range
41B - US 421 from KY 341 to Indiana State Line	37	x				After 2045	After 2045	Long-Range
18A - US 31W & KY 61 from Columbia to I-65	38		x			Long-Range	Long-Range	Long-Range
36B - KY 536 from KY 17 to US 27	39	x				After 2045	After 2045	Long-Range
40 - US 641 from Tennessee State Line to US 60	40				x	After 2045	After 2045	Long-Range
42A - US 421 from Virginia State Line to I-75	41	x	x			After 2045	After 2045	Long-Range
12 - KY 922 from Broadway (US 68) to I-64/I-75	42	x				After 2045	After 2045	Long-Range
50C - US 60 from Natcher Pkwy to US 31W	43		x		x	After 2045	After 2045	Long-Range
10 - KY 100/US 79 from Tennessee State Line to I-65	44				x	After 2045	After 2045	Long-Range
28B - US 68 from I-64/I-75 to Ohio State Line	45	x		x		After 2045	After 2045	Long-Range

ATTACHMENT

The following charts summarize the model results in terms of expenditures by type and the SWCP cash fund balance for each funding scenario.

LOW FUNDING SCENARIO

Figure K.1 – SWCP Total Expenditures by Type for Low Funding Scenario (All values in millions of YOE dollars)

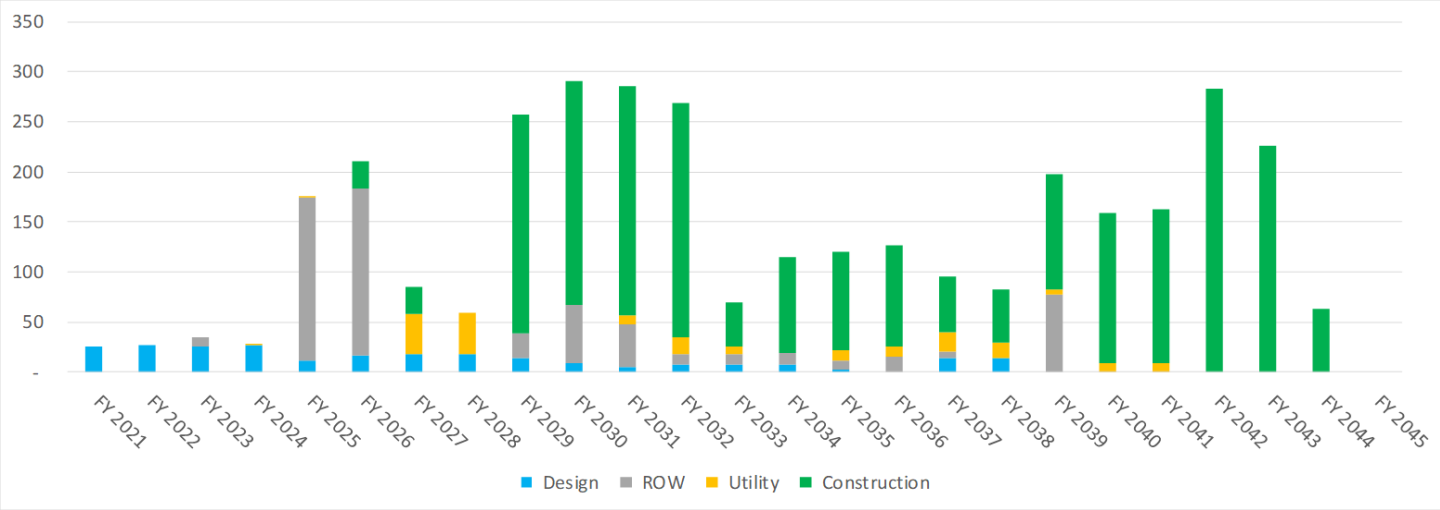
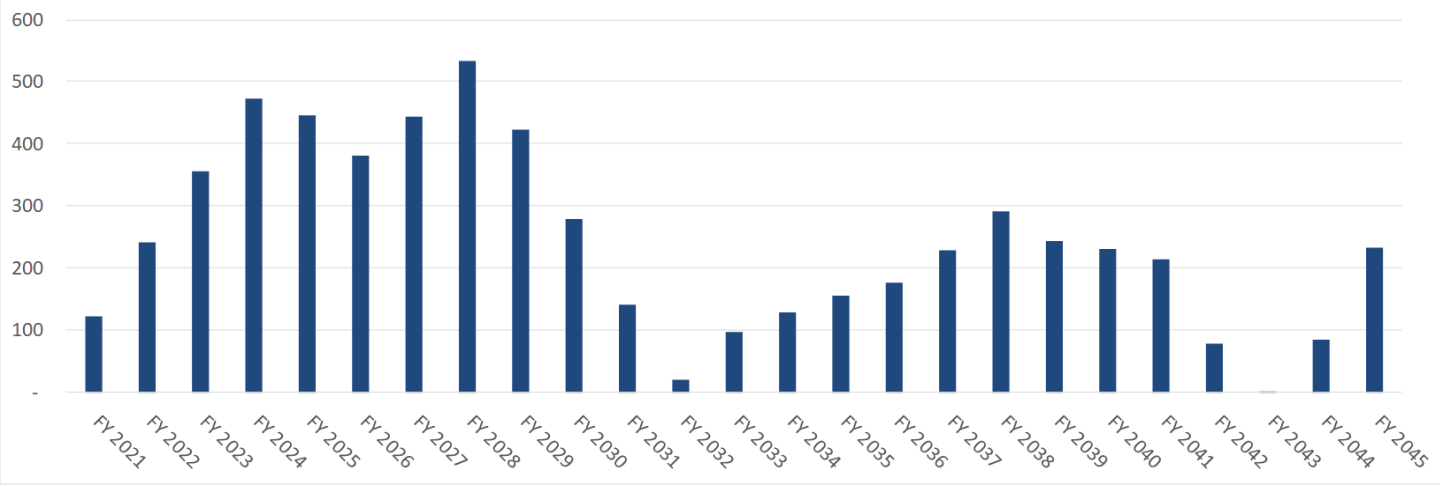


Figure K.2 – SWCP Fund Cash Balance for Low Funding Scenario (All values in millions of YOE dollars)



MEDIUM FUNDING SCENARIO

Figure K.3 – SWCP Total Expenditures by Type for Medium Funding Scenario (All values in millions of YOE dollars)

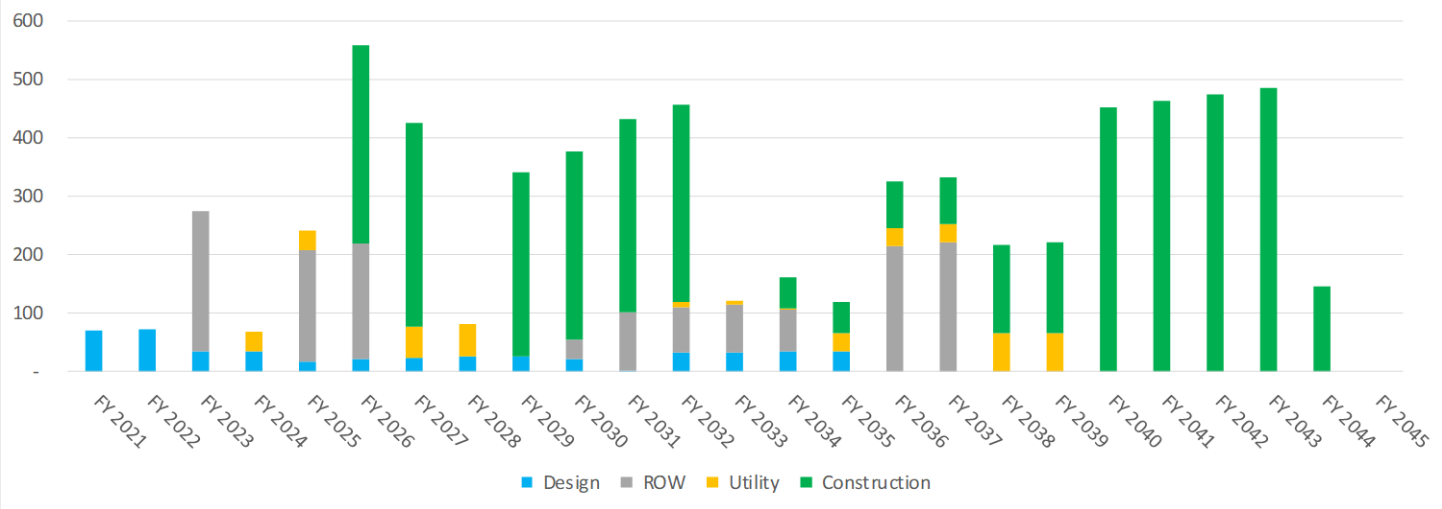
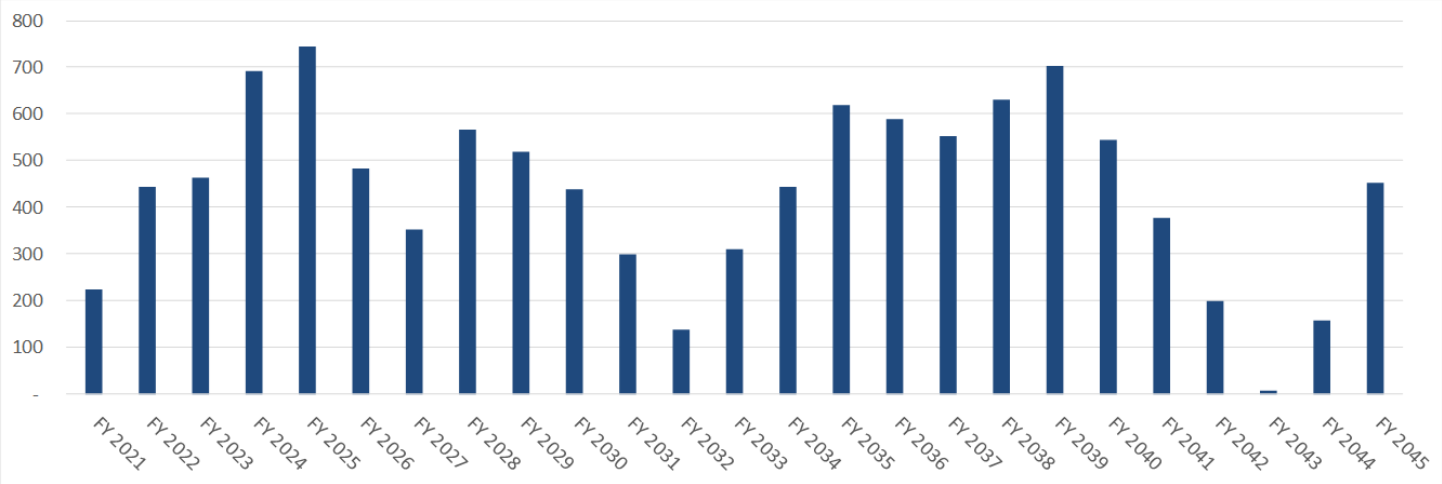


Figure K.4 – SWCP Fund Cash Balance for Medium Funding Scenario (All values in millions of YOE dollars)



HIGH FUNDING SCENARIO

Figure K.5 – SWCP Total Expenditures by Type for High Funding Scenario (All values in millions of YOE dollars)

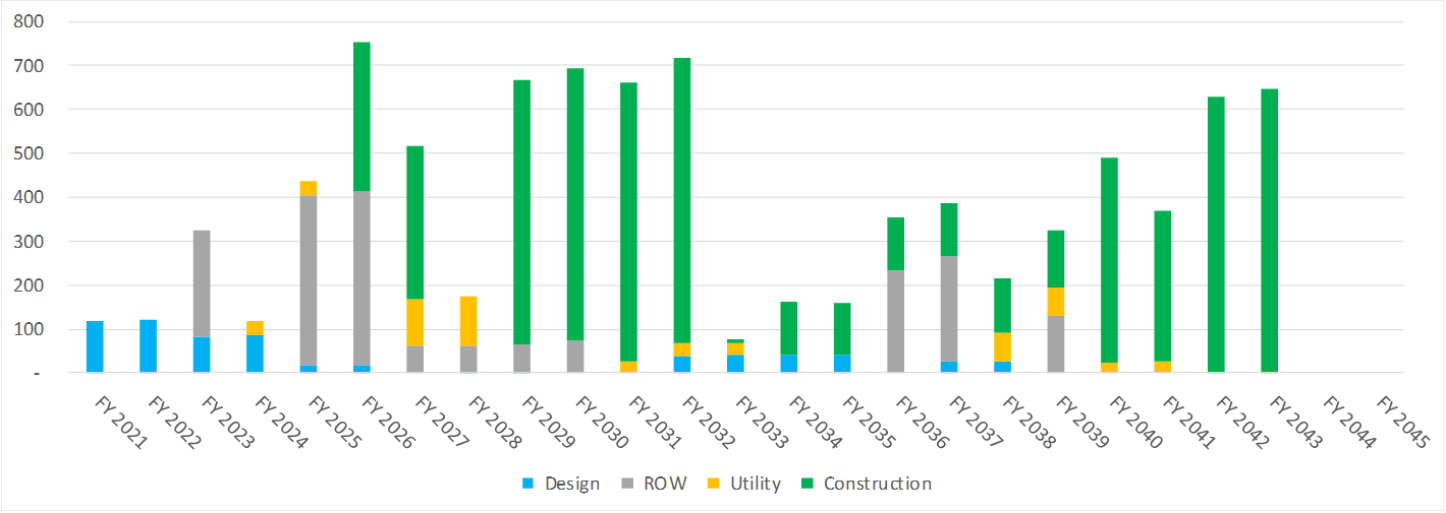


Figure K.6 – SWCP Fund Cash Balance for High Funding Scenario (All values in millions of YOE dollars)