



Financial Plan

FINANCIAL PLAN

INTRODUCTION

This plan's financial analysis was developed in response to the requirements for a "fiscally constrained plan" that was introduced in the Intermodal Surface Transportation Efficiency Act (ISTEA) and continued in subsequent federal transportation legislation including the FAST Act.

This plan considers capital, operation and maintenance costs associated with the preservation and continued operation of the existing transportation system, as well as the costs associated with the recommended improvements presented in this plan. It also projects revenues (funds) from all sources that will be available to pay for the improvements. The process includes revenue estimation, cost analysis and a revenue/cost comparison to arrive at a fiscally constrained plan. Revenues and costs are tracked separately for Ohio, Kentucky and Indiana, respectively.

FEDERAL FUNDING SOURCES

A significant part of OKI's funding flows into the region from federal sources. Federal funding amounts are based on estimates of the region's share of funds from programs authorized and appropriated by Congress. The region's share of these federally funded programs is based on the assumption that current funding levels will rise between one and 3.5 percent per year through 2040. The current FAST Act programs that provide funding for the region's transportation system are described below.

Interstate Maintenance

The Interstate Maintenance (IM) program finances projects to rehabilitate, restore and resurface the interstate system. The match rate for this program is 90 percent federal and 10 percent state or local. It is administered by the states.

National Highway System

The National Highway System (NHS) consists of 160,000 miles of the nation's major roads. It includes all interstate routes, a large percentage of urban and rural principal arterials, the defense strategic highway network and strategic highway connectors. The match rate is 80 percent federal and 20 percent state or local. A link to the OKI region's NHS system can be found here:

http://www.fhwa.dot.gov/planning/national_highway_system/nhs_maps/ohio/cincinnati_oh.pdf

Surface Transportation Block Grant Program (STBG)

The Surface Transportation Block Grant Program (formerly STP) is the most versatile type of transportation funds. Roadways that have a federal functional classification of collector or higher in are eligible for STP funds. These funds may also be used for capital projects for transit agencies, regional planning and bicycle and pedestrian facilities. The STBG set-aside (formerly Transportation Alternatives) program also receives 10 percent of the STBG funding levels.

Other modal projects eligible for STBG funds include freight, capital transit projects, commuter rail, bus terminals and facilities, carpool projects, traffic monitoring, and bicycle and pedestrian facilities that are above and beyond the TA allocation.

In addition to OKI's STP allocation by formula (population of the urban area), the three state DOT's invest a significant portion of their state STBG funding in the region on a variety of the above identified project types.

Transportation Alternatives Program

As noted above the TA program is a set-aside of the STBG program. The FAST Act continues the program with no major changes from previous transportation bills and is used for a variety of transportation projects such as pedestrian and bicycle facilities, safe routes to school, historic preservation of transportation facilities, vegetation management and environmental mitigation related to storm water and habitat connectivity.

Congestion Mitigation Air Quality

The Congestion Mitigation Air Quality Improvement Program (CMAQ) provides funds for transportation projects in maintenance areas for ozone and carbon monoxide. These projects contribute to meeting the attainment of national ambient area air quality standards. The OKI region is eligible for these funds because of its designation as an ozone maintenance area. Transportation projects and programs are eligible for CMAQ program funds if they are associated with documented emissions reductions and do not add to the existing roadway capacity. CMAQ is administered by OKI in Dearborn County. In Ohio, OKI operates through a cooperative statewide committee. KYTC administers CMAQ for the Northern Kentucky portion of the region.

Bridge Replacement and Rehabilitation Program

This program enables the states to replace significant bridges that are unsafe because of structural deficiencies, physical deterioration or functional obsolescence. The match rate is 80 percent federal and 20 percent state or local.

Nationally Significant Freight and Highway Projects (NSFHP)

The U.S. Department of Transportation (USDOT) administers the Fostering Advancements in Shipping and Transportation for the Long-term Achievement of National Efficiencies (FASTLANE) grant program. The FASTLANE program is a new program in the Fixing America's Surface Transportation (FAST) Act to fund critical freight and highway projects across the country. The FAST Act authorizes \$800 million in funding for the FASTLANE program for fiscal year 2016.

The FASTLANE grant program provides funding for projects of national or regional significance. FASTLANE grants provide dedicated funding for projects that address major issues facing our nation's highways and bridges. The NSFHP program is authorized at \$4.5 billion through 2020.

Federal Transit Administration Funding

The Section 5307 formula transit grant program makes funds available on the basis of a statutory formula to all urbanized areas in the country.

For capital projects, the match rate is 80 percent federal and 20 percent state or local. Capital funds are used for transit maintenance, such as replacing buses, as well as other projects. For operating assistance, the match rate is 50 percent federal and 50 percent state or local. Operating assistance is capped at a percentage of the total Section 5307 apportionment for each urban area.

The Federal Transit Administration (FTA) Section 5309 discretionary program is a potential funding source for the recommended rail transit system. Funds are split 40 percent for new starts, 40 percent for rail modernization and 20 percent for bus and other. The match rate is 80 percent federal and 20 percent state or local.

OKI also administers the FTA Section 5310 Program known as the Specialized Transportation Program. This program provides funds for projects where existing transportation services are unavailable, insufficient or inappropriate. The program provides an 80 percent federal share for capital projects (including capitalized maintenance).

During 2007, OKI was named the Designated Recipient for FTA Sections 5316 Job Access and Reverse Commute (JARC) and 5317 New Freedom programs. Although the JARC program no longer exists, the New Freedom program continues with a focus on projects that go beyond the requirements of the Americans with Disabilities Act. As the Designated Recipient, OKI is responsible for soliciting and awarding projects that are selected on a competitive basis and are based on the Coordinated Public Transit-Human Services Transportation Plan for the OKI region. The Cincinnati urbanized area received approximately \$1.3 million in New Freedom funds for fiscal years 2015 and 2016.

Federal Emergency Relief Fund

This program provides emergency funds to the state and counties for the repair or reconstruction of federal-aid highways and roads on lands that have suffered serious damage by natural disasters or catastrophic failures from an external cause. This requires a Governor's Disaster Declaration. Congress provides \$100 million nationwide annually.

Those repairs made within 180 days after the occurrence of the disaster or failure are eligible for 100 percent of federal reimbursement. Any repairs after the 180 day period are eligible for the standard federal share reimbursement (80/20 percent).

OHIO STATE AND LOCAL FUNDING SOURCES

Some of the Ohio Department of Transportation (ODOT) highway programs are listed below. A portion of the statewide allocation will be used for projects located in Butler, Clermont, Hamilton or Warren counties.

TRAC

This is funding for ODOT's new facilities and major expansion projects. These projects add lanes to freeways, build bypasses, expand existing interchanges, build new interchanges, fund major transit expansion and intermodal/multimodal terminals. ODOT funds the TRAC from a variety of sources depending upon the nature of the project, the funding sources for which it is eligible, and the funding available in a specific program.

ODOT

ODOT invests state and federal funds in the Ohio portion of region on a variety of projects with both state and federal funding including their own allocated STBG, STBG set-aside, CMAQ, Bridge, etc. These sources are described above. Following are programs administered by ODOT to assist county and local entities implement a variety of safety, maintenance and capital improvements.

County Local Bridge Program

The County Local Bridge Program (approximately \$32 million annually in Ohio) provides funds for bridge replacement and rehabilitation and is administered by the County Engineers Association of Ohio (CEAO). The standard federal participation rate is 90 percent. Funding is only provided for construction.

County Surface Transportation Block Grant Program

The County Surface Transportation Program (CSTBG) has two components. There is a regular construction funding program for eligible roadway improvements and is administered by the Ohio Department of Public Safety (ODPS) for safety studies. The CEAO serves as the program manager and is responsible for project selection, funding criteria and program priorities. ODOT provides federal CSTBG funds to counties each year through the CEAO. The program is funded at approximately \$20 million annually with \$750,000 set aside for safety studies. Eligible activities include new construction, major reconstruction, resurfacing, restoration and rehabilitation (3-R projects), bridges not eligible for county bridge funding, guardrail construction and reconstruction, center line and edge line striping and raised pavement marker projects. The standard federal participation rate is 80 percent on roadway projects, 100 percent on safety projects and 100 percent on safety studies.

Local Major Bridge Program

The Local Major Bridge program provides federal funding to counties and municipalities for bridge replacement or major bridge rehabilitation projects. Funds are for construction only for local major bridges that carry vehicular traffic. These are defined as moveable bridges or bridges having a deck area greater than 35,000 square feet. Approximately \$25 million annually is available in Ohio and ODOT will provide up to 80 percent of the eligible costs for the project.

Municipal Bridge Program

The Municipal Bridge Program (approximately \$8 million annually in Ohio) provides funds for replacement and rehabilitation of bridges that carry vehicular traffic on a public roadway within municipalities. Bridges funded under this program must be at least 20 feet in length; be listed in the ODOT Bridge Management System with a sufficiency rating value of 80 or less for rehabilitation, or less than 50 for replacement; and be classified as structurally deficient or functionally obsolete. ODOT will provide up to 80 percent of the eligible costs for construction only. The municipality is responsible for the balance of the construction costs and all costs associated with preliminary engineering, environmental studies and documents, final design and right of way. The local match for construction is required to be cash.

Noise Walls Program

The Noise Wall Program provides funds for retrofitting existing highways with noise barriers. The annual statewide budget has been \$5 million.

Safety Program

The Safety Program provides funds to ODOT and local governments for highway safety treatments or corrective activity designed to alleviate a safety problem or a potentially hazardous situation. The program is funded at approximately \$80 million annually in Ohio. ODOT will provide up to 90 percent of eligible costs for preliminary engineering, detailed design, right-of-way or construction. Projects may be on a city street or county or township road. Prioritization is based on the following criteria: crash frequency/density, crash rate, relative severity index, equivalent property damage only rate, percent truck traffic and rate of return. Typical projects include signalization, turn lanes, pavement markings, traffic signs, traffic lights, guardrails impact attenuators, concrete barrier end treatments and break away utility poles.

Urban Paving Program

The Urban Paving Program provides funds for eligible surface treatment and resurfacing projects on state and U.S. routes within municipal corporations. The program is funded on an 80/20 basis with local governments providing the 20 percent match for project construction costs.

State Capital Improvements Program

The State Capital Improvements Program (SCIP) provides low-interest loans and grants for infrastructure facilities. Eligible projects include improvements to roads, bridges, culverts, water supply systems, wastewater systems, storm water collection systems and solid waste disposal facilities. Funding is provided from the issuance of up to \$120 million in bond sales annually.

Local Transportation Improvements Program

The Local Transportation Improvements Program (LTIP) was created by the legislature in 1989 and provides an additional \$60 million in gasoline tax receipts statewide each year. The program provides grants for local roads and bridge projects, which must have useful lives of at least seven years.

Both SCIP and LTIP funds are distributed for local government capital projects throughout Ohio on a competitive and population basis among 19 districts established by the Ohio Public Works Commission. Hamilton County is a district by itself (District 2). Butler, Clermont and Warren counties are in a district that includes Clinton County (District 10). Funding estimates from these two programs are based on the assumption that they will be renewed when they expire.

Through the two programs, the Ohio Public Works Commission provides grants, loans and financing for local debt support and credit enhancement. Eligible projects include improvements to roads, bridges, culverts, water supply systems, wastewater systems, storm water collection systems and solid waste disposal facilities.

KENTUCKY STATE AND LOCAL FUNDING SOURCES

In Kentucky, funds for both the State Projects and Rural Secondary Programs are derived from gasoline tax receipts, and are expended under the direction of the Department of Highways. These funds may be used for the construction, reconstruction, and maintenance of state and county roads and bridges.

Another source of state funds is from Unspecified Programs, which encompass all the state revenue that Kentucky allocates to the OKI counties that do not fall into any of the established state programs. These allocations usually finance 100 percent of these projects.

INDIANA STATE AND LOCAL FUNDING SOURCES

State of Indiana Public Mass Transportation Fund

The Public Mass Transportation Fund (PMTF) is a fund authorized by the legislature to receive revenue from the State's General Fund. These funds are allocated on a calendar year basis using a performance-based formula to eligible municipal corporations. In 2014, INDOT allocated \$42.5 million in PMTF to 64 transit systems in Indiana.

Electric Rail Service Fund

The Electric Rail Service Fund (ERSF) is a special state fund generated from property tax on a railroad company's distributable property that provides service with a commuter transportation district. Currently, all funds go to the Northern Indiana Commuter Transportation District (NICTD), the only entity eligible for these funds at the present time. In 2014, INDOT allocated \$200,641 in ERSF funds to NICTD.

Commuter Rail Service Fund- Sales Tax

The Commuter Rail Service Fund (CRSF) is distributed to commuter transportation districts to be used for maintenance, improvement, and operations of commuter rail service. In 2014, INDOT allocated a total of \$8,539,689 from General Sales and Use Tax to NICTD.

Commuter Rail Service Fund – Situs Tax

Collections from the indefinite-situs tax on distributable property of railroad car companies also contribute to the Commuter Rail Service Fund. These funds must be used for debt financing for long term capital needs. In 2014, INDOT allocated \$7,953,373 from Indefinite Situs Tax to NICTD. Currently, all CRSF monies go to the NICTD, the only entity eligible for these funds at the present time.

INNOVATIVE FINANCE

Innovative finance refers to a series of administrative and legislative initiatives undertaken in recent years which have removed barriers and added flexibility to federal participation in transportation finance. Policy makers recognized they could accelerate surface transportation project development and expand the base of available resources by removing barriers to private investment. This brings the time value of money into federal program decision making. Encouraging the use of new revenue streams, particularly to retire debt obligations and reducing

financing and related costs, frees up savings for transportation system investment. These financing initiatives and techniques, which are commonly used in the private sector, are relatively new to federal aid transportation funding and are thus frequently referred to collectively as innovative finance.

Innovative finance is broadly defined as a combination of special funding initiatives. In the transportation industry, the term innovative finance has become synonymous with techniques that are specifically designed to supplement the traditional methods used to finance highways. The United States Department of Transportation's (USDOT) innovative finance initiatives are intended to augment rather than replace traditional financing techniques. The current status of these programs is described in more detail below.

Credit Assistance

Two of the most significant federal credit assistance programs introduced in recent years are the Transportation Infrastructure and Finance Innovation Act (TIFIA) and the State Infrastructure Bank (SIB) programs.

- **Transportation Infrastructure and Finance Innovation Act**

TIFIA was passed as part of TEA-21 and authorized the USDOT to establish a new credit program by offering eligible applicants the opportunity to compete for direct loans, loan guarantees, and lines of credit for up to one-third of the cost of large infrastructure construction projects of national significance. This is provided that the borrower has an associated revenue stream, such as tolls or local sales taxes, that can be used to repay the debt issued for the project. An eligible project must be included in the applicable State Transportation Improvement Program (STIP). Major requirements include a capital cost of at least \$50 million (or 33.3 percent of a state's annual apportionment of federal-aid funds, whichever is less) or \$15 million in the case of Intelligent Transportation Systems (ITS). TIFIA credit assistance is limited to a maximum of 33 percent of the total eligible project costs. TIFIA projects include highway toll roads and bridges, transit systems, rail stations, ferry terminals and intermodal facilities.

- **State Infrastructure Banks**

State Infrastructure Banks (SIB) are revolving infrastructure investment funds for surface transportation that are established and administered by states. A SIB, much like a private bank, can offer a range of loans and credit assistance enhancement products to public and private sponsors of Title 23 highway construction projects or Title 49 transit capital projects. The requirements of Titles 23 and 49 apply to SIB repayments from federal and non-federal sources. All repayments are considered to be federal funds.

SIBs give states the capacity to make more efficient use of transportation funds and significantly leverage federal resources by attracting non-federal public and private investment. Alternatively, SIB capital can be used as collateral to borrow in the bond market or to establish a guaranteed reserve fund. Loan demand, timing of needs and debt financing considerations are factors to be weighed by states in evaluating a leveraged SIB approach.

Tax Incremental Financing

Tax Incremental Financing (TIF) is a tool to use future gains in taxes to finance the current improvements that will create those gains. When a public project such as a road, school or hazardous waste cleanup is carried out, there is an increase in the value of surrounding real estate and often new investment such as construction of new or rehabilitated buildings. This increased site value and investment creates more taxable property, which increases tax revenues. The increased tax revenues are the tax increment. TIF dedicates that increased revenue to finance debt issued to pay for the project. TIF is designed to channel funding toward improvements in distressed or underdeveloped areas where development would not otherwise occur. TIF creates funding for public projects that may otherwise be unaffordable to localities.

Residential Improvement District

A Residential Improvement District (RID) is another name for an incentive district TIF. They work the same way as a standard TIF. Property within the incentive district is exempt from regular property taxes. The exempt property does not pay property taxes rather they make Payments In Lieu of Taxes (PILOT). These PILOTs are the same amount as property taxes but they do not get distributed the same way as property taxes. The Ohio authorizing legislation is ORC 5709.73(C).

Debt Financing and Cash Flow Management Tools

Because of their complexity, cost and lengthy design and construction periods, transportation projects are often financed by issuing bonds. Repayment of the bonds over several years has traditionally been covered by sources such as state and local taxes or revenue generated from highway user fees referred to as Grant Anticipation Notes (GAN), backed by anticipated grant moneys. Grant Anticipation Revenue Vehicles (GARVEE) is a particular form of GAN being used for transportation projects.

- **Garvee Bonds**

In the broadest sense, a GARVEE is a type of anticipation vehicle, which are securities (debt instruments) issued when moneys are anticipated from a specific source to advance the upfront funding of a particular need. In the case of transportation finance the anticipation vehicles' revenue source is expected federal-aid grants.

Specific to highways, a GARVEE is used as a term for a debt instrument that has a pledge of future Title 23 federal-aid funding. The issuer may be a state, political subdivision or a public authority.

GARVEEs enable a state to accelerate construction timelines and spread the cost of a transportation facility over its useful life rather than just the construction period. The use of GARVEEs expands access to capital markets as an alternative or in addition to potential general obligation or revenue bonding capabilities. The upfront monetization benefit of these techniques needs to be weighed against consuming a portion of future years' receivables to pay debt service. This approach is appropriate for large, long-lived, non-revenue generating assets.

- **Advance Construction**

The use of advance construction and partial conversion of advance construction, facilitates state issuances of GARVEEs. GARVEEs are used in conjunction with advance construction to enable using federal-aid funds for future debt service payments.

Public Private Partnerships

A public-private partnership (P3) is a broad term that collectively refers to contractual agreements formed between public and private sector partners, where the private sector partner steps outside of its traditional role and becomes more active in making decisions as to how a project will be completed. P3s would allow for working with the private sector in new and innovative ways to develop, finance, maintain or operate a transportation facility. One of the strengths of a P3 is the number of ways to fund a project as compared to traditional methods through state gas tax and federal dollars. FHWA supports project funding using P3s. P3s include availability payments, tolling, and Private Activity Bonds.

- **Availability Payment**

Availability Payments (APs) may be the best method for funding a large-scale, long-term transportation project worth hundreds of millions or over \$1 billion in cost. A private firm pays the upfront cost of the entire project in exchange for annual payments from the state department of transportation (DOT) over a specified period of time. The private entity does not use tolling or any other user-based fee with AP. The AP financing allows for the delivery of a large-scale project much sooner than the traditional financing mechanism.

- **Private Activity Bonds**

Private Activity Bonds (PAB) bring the benefit of tax-exempt bond financing to the transportation industry. PAB's provide private developers and operators with access to tax-exempt interest rates which lowers the cost of capital. The result of increasing the involvement of private investors in highway projects generates new sources of money, ideas and efficiency.

- **Regional Infrastructure Improvement Zones**

Regional Infrastructure Improvement Zones (RIIZs), introduced in federal legislation in the 112th Congress (H.R. 3780), are an innovative infrastructure financing solution. RIIZs change the federal tax code to allow private corporations or individuals to contribute tax-deductible dollars to lower local costs associated with construction and maintenance of public infrastructure, even if the project benefits the private entity. The local government project administrator reimburses the Federal General Revenue Fund 20 percent of the contributed funds, to help offset the deduction. Jurisdictions benefit because more good projects are built faster and cheaper. The private sector benefits because economically powerful projects, helpful to their operations, are built. The impact on the federal budget is small, if not positive. RIIZs attract private-sector driven infrastructure investment that unleashes federal and state funds for projects that the market place deems most economically powerful.

REVENUE (FUNDING) AND COST EXPECTATIONS

The primary source of public funding will be from the federal sources. Fixing America's surface Transportation Act (FAST) reauthorizes federal highway, transit, safety and rail programs for federal fiscal years 2016 through 2020. It provides modest increases over previous bills.

Estimated funding for transportation improvements for the OKI region is based on data from federal, state and local sources. Future funding levels expected for the planning period covering 2016 through 2040 were estimated based on past trends and through consultation with ODOT, the Kentucky Transportation Cabinet (KYTC), the Indiana Department of Transportation (INDOT) and FHWA. First, the base annual revenue is derived (averaged) from actual expenditure data. A discussion of this derivation is provided in the following text.

All three transportation agencies provided data for OKI's use in deriving estimates for revenue. ODOT provided data for all projects for the Ohio portion of region covering the period of 2011 through 2015. KYTC provided historical information on federal and state expenditures for highway projects statewide for the years 2006 through 2014. INDOT provided data from Dearborn County over the period 1999 through 2010. Each state provided sufficient detail to identify the major project type. OKI collapsed the data into major categories of new highway capacity, highway operations and maintenance, non-highway, transit capital, and transit operating and derived an estimate of the annual base year state and federal funding stream. To complete the base year funding picture, OKI estimated local highway and transit funding using OKI Transportation Improvement Program (TIP) information because it was not fully included in the DOT data sets.

- The local portion of local-let funded projects in Ohio was not included in the historical data provided by ODOT. Likewise, construction engineering (CE) was not included. OKI estimates the local let projects to be 25 percent of all projects. The local share is assumed to be 20 percent which is typical of most projects. Construction engineering is assumed to be 10 percent of the total project cost.
- The local portion of Kentucky project costs was not included in the data provided to OKI. OKI estimates the portion of the total project cost to be five percent of total expenditures based on a review of the TIP. Therefore the total revenue estimates from KYTC historical records is increased by five percent.
- Historical Indiana revenue estimates are revised to include the amount of non-reported local funding provided by US-50 bridge projects in Lawrenceburg.

The estimated annual base year revenue amount available from all sources is adjusted to account for revenue growth. Based on secondary data discussed below, the revenues are adjusted based on guidance from each state. Indiana and Ohio are adjusted 1% per year. Kentucky is adjusted upwards 3.5% per year. The relative proportion for expenditures, such as the proportion of operations and maintenance (O&M) funds versus capital, are assumed to remain the same through the planning period. The total revenue for the planning period (2016 to 2040) is equivalent to the future value of a series of annual payments at the growth rate stated.

An estimated \$17.47 billion (B) (\$10.984B in Ohio, \$6.19B in Kentucky, and \$0.29B in Indiana) is expected to be available over the 25 year planning period of 2016 to 2040. These revenues are a mix of formula and non-formula funds. Formula based funds are those that OKI or other local governments receive on an ongoing, annual basis and are therefore, repetitive and predictable. It is assumed that the non-formula based expenditures will continue at approximately the same levels plus some growth for inflation.

Once the revenues were identified for each state, the dollars available for new projects were determined by subtracting the funds equal to four years of base annual revenues to approximate the level required for currently programmed TIP projects and O&M and subtracting the funds attributable to transit formula funds. Figures 2 and 3 present the funds that can reasonably be expected to be available.

Figure 1 - Regional Summary of Available Resources	
All Revenue	\$17.47 billion
TIP	\$2.30 billion
Transit Formula	\$2.85 billion
Highway O&M	\$5.02 billion
Amount Available for Multimodal Discretionary Projects	\$7.29 billion

Figure 2 - OKI Regional Transportation Plan Estimated Revenues

Revenues by State	Annual Base Amount	Plan Period Total	Available for Plan (2020-2040)
OH New HWY Capacity Total		\$3,744,886,056	\$2,907,848,876
OH HWY O&M Total		\$3,711,939,845	\$3,255,341,314
OH Non-Hwy Total		\$186,695,199	\$186,134,199
OH Transit Capital		\$933,475,996	\$805,098,456
OH Transit Operating		\$2,405,073,450	\$2,070,487,818
Total OH Region Expenditures ¹	\$380,423,693	\$10,982,070,546	\$9,726,170,395
Discretionary Available			\$3,899,081,532
KY New HWY Capacity Total		\$3,099,403,604	\$2,800,023,484
KY O&M Total		\$1,674,938,637	\$1,600,795,908
KY Non-Hwy Total		\$283,240,262	\$272,151,131
KY Transit Capital		\$264,048,281	\$237,983,989
KY Transit Operating		\$869,494,399	\$783,666,323
Total KY Region Expenditures ²	\$156,463,279	\$6,194,222,293	\$5,697,717,945
Discretionary Available			\$3,310,158,603
IN New HWY Capacity Total		\$70,104,188	\$70,104,188
IN O&M Total		\$212,713,321	\$168,352,826
IN Non-Hwy Total		\$10,026,735	\$9,751,735
IN Transit		\$0	\$0
Total IN Region Expenditures ³	\$9,660,529	\$292,844,244	\$248,208,749
Discretionary Available			\$79,855,923
OKI Region	\$546,547,500	\$17,469,137,084	\$15,672,097,090
Regional Total Discretionary			\$7,289,096,058

Notes:

Annual base amount estimated for each state individually based on data provided by ODOT, KYTC & INDOT with the exception of transit amounts which are from the OKI TIP. The amount for the planning period is extrapolated by applying annual growth rates specific to each state. The amount available for each project type based on DOT data (with the exception of added-in transit). These ratios are assumed targets for the Plan.

1Ohio: 1% annual growth based on ODOT recommendation. ODOT data for OKI counties for years 2011-2015 used. Project type ratios and reasonably expected revenues based on 5 years expenditure data. See Ohio Annual & Average tab

2KY: 3.5% annual growth based on KYTC recommendations. Proportion of NKY funds relative to the entire state provided to OKI by KYTC. Project type ratios based on entire KY state data over 5 year period. See KY Rev Projections tab.

3IN: 1% annual growth. INDOT data for Dearborn County for years 2007-2016 used. Large Locally-funded project (US-50 included). Project type ratios and reasonably expected revenues based on 10 years of INDOT STIP expenditure data.

Discretionary Available includes New highway capacity, Non-Hwy and Transit capital less the amount already programmed in the TIP.

Assumptions on Revenue Forecasts

In the absence of local data to formulate an estimated annual rate of growth, OKI relies on approaches from the collective states in which OKI operates. The annualized estimated revenue growth is assumed to be 3.5 percent per year in Kentucky. In Ohio and Indiana the growth rate is assumed to be 1% based on guidance from the state DOT's.

Federal funding has remained steady during the multiple extensions of MAP-21. FY12 and FY13 funding increased about 1% year over year and fiscal years 2014, 2015 and 2016 remained flat. The four year cycle for metropolitan plan updates will require these assumptions to be revisited on a consistent and regular basis.

Assumptions on Cost Estimation

- **Year of Expenditure Cost**

The FAST Act requires that this plan's fiscal constraint demonstration include estimates of project costs in terms of dollars for the year of expenditure (YOE). In other words, a project that is built in a future year would include inflation in the cost estimate. For example, 2025 projects would have the cost in terms of 2025 dollars, 2035 projects would have the cost in terms of 2035 dollars. The YOE is assumed to be the mid-point of the construction period. Year of expenditure cost estimation requires a current or base year cost estimate, the implementation date (year) of the project and an inflation factor for the project to reflect the cost in terms of the implementation year.

- **Base Year Cost**

Base year project cost (BY) is developed in the documented planning process that generated the concept of the project. Some projects not originating in a documented study are estimated by staff as described below.

- **Year of Expenditure**

The year in which the project is constructed is estimated by staff. Staff considered information from various corridor studies, perceived complexity of the construction process, environmental challenges, availability of right of way and revenue flow to assign projects into implementation time frames. The time frames are consistent with air quality conformity analysis years for the region of 2020, 2030 and 2040.

- **Inflation Factor**

The OKI Plan is required to account for the time value of money (inflation). Therefore, project costs are inflated using generalized figures derived from industry cost information (material, labor, etc.) and guidance from the states' transportation agencies. This practice is known as developing estimated project costs in terms of their YOE. The YOE is estimated by OKI staff as the midpoint of the project's year of construction. The year of expenditure cost is the product of the base year cost and an inflation factor. The factor is dependent on the inflation rate and the number of years between the BY and the YOE. OKI has

estimated a yearly inflation rate based on information from several sources. For this plan update the inflation rate (i) is 2.5 percent per year.

This rate is based on the recent trends in project construction cost moderation. Figures 3 and 4 demonstrate that highway construction cost trends have moderated. A review of cost growth trend (inflation) assumptions used in metropolitan areas across Ohio and Kentucky for metropolitan plans, indicates that 2.5 percent is in the range of what other plans are using. For example, KIPDA and the Lexington MPO both use four percent. MVRPC used 2.3 percent. MORPC used a range from 3.0 to 3.5 percent. TMACOG used 1.5 percent. Access Ohio 2040 published in May 2014 assumes 2.5%.

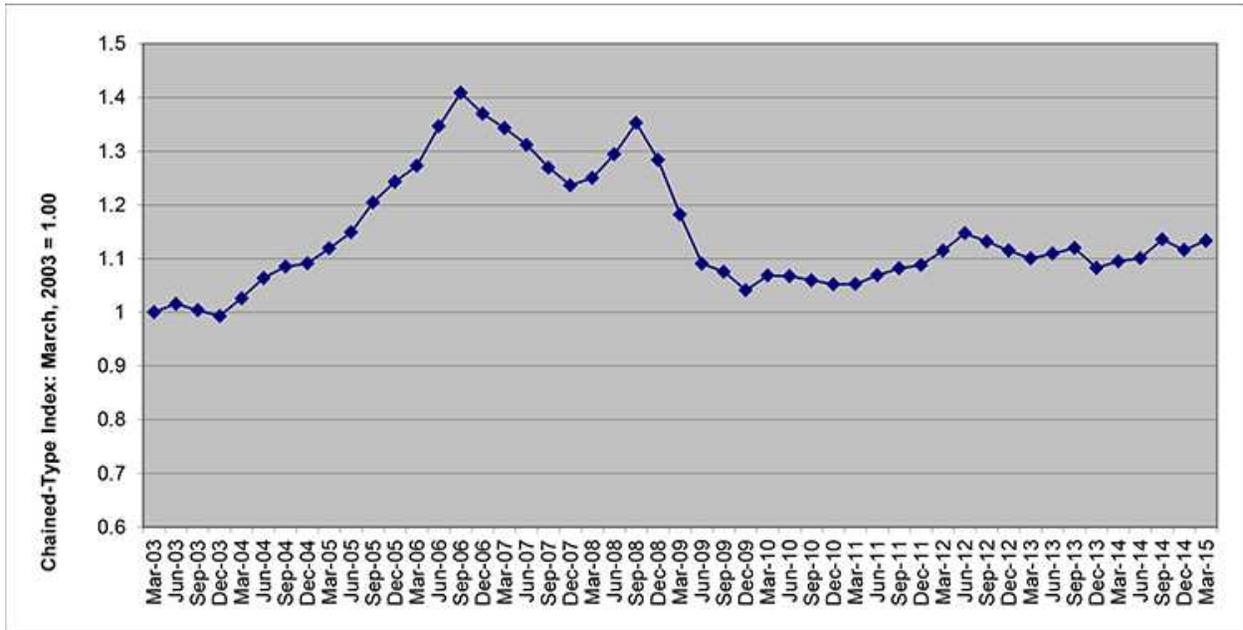
The formula for converting base year cost estimates to year of expenditure cost estimates is:

$$\begin{aligned} \text{YOE Cost} &= \text{BY Cost Estimate} \times \text{Inflation Factor} \\ \text{YOE Cost} &= \text{BY Cost Estimate} \times [1 + (i / 100)]^{(\text{YOE} - \text{BY})} \\ (\text{BY} &= \text{base year}) \end{aligned}$$

Figure 3 - Construction Cost Trends for Highways*Jul-15**Table PT-1*

Year	Quarter	NHCCI Index
2003	March	1
	June	1.0156
	September	1.0038
	December	0.9929
2004	March	1.026
	June	1.0638
	September	1.0849
	December	1.091
2005	March	1.1189
	June	1.1489
	September	1.2045
	December	1.2429
2006	March	1.2727
	June	1.3464
	September	1.4084
	December	1.3693
2007	March	1.3425
	June	1.3118
	September	1.2691
	December	1.2363
2008	March	1.25
	June	1.2938
	September	1.3521
	December	1.2835
2009	March	1.1818
	June	1.0901
	September	1.0752
	December	1.041
2010	March	1.0683
	June	1.0671
	September	1.0595
	December	1.052
2011	March	1.0524
	June	1.0691
	September	1.0817
	December	1.088
2012	March	1.1147
	June	1.1468
	September	1.1315
	December	1.1148
2013	March	1.1002
	June	1.1092
	September	1.1195
	December	1.0827
2014	March	1.0947
	June	1.1007
	September	1.1354
	December	1.1158
2015	March	1.1334

Figure 4 - Quarterly Highway Construction Cost Trends



1/ Source: Federal Highway Administration, Office of Highway Policy Information, "National Highway Construction Cost Index (NHCCI)"

Estimation of Individual Project Costs

OKI will use the cost estimate from published planning studies or those provided by the agency that submitted the project. In the absence of a cost estimate from a primary source, an estimate is made using either a Kentucky Project Information Form (PIF) (if available for a Kentucky project) or the default value described below using secondary literature research. For more information click here: [Construction Cost Default Values](#).

- **Roadway**

Roadway project cost estimates include construction and right of way for projects which introduce a new facility on a new alignment and/or add additional through lanes. Default data is tabulated from FHWA Highway Economic Requirements System (HERS) 2010 data and factored to 2015 using the ODOT highway cost factor of 1.025.

Figure 5 - 2015 Default Per Lane Miles Cost		
Urban	Add Lane	New Alignment
Freeway/Expressway/Interstate	\$13,000,000	\$19,200,000
Other Principal Arterial	\$9,500,000	\$12,900,000
Minor Arterial/Collector	\$6,500,000	\$8,800,000
Rural	Add Lane	New Alignment
Interstate	\$2,900,000	\$3,600,000
Other Principal Arterial	\$2,300,000	\$2,800,000
Minor Arterial	\$2,200,000	\$2,700,000
Major Collector	\$2,100,000	\$2,600,000

- **Interchange on interstate system**

Interchange cost estimates are based on recently completed interchanges in or near the OKI region and recent cost estimates from local area studies. OKI will use \$75M for urban interchanges, \$50M for suburban and \$30M for rural as the default interchange cost on interstate facilities.

- **Transit**

Cost estimates in Figure 6 were used estimating transit project costs based on input provided by the Transit Authority of Northern Kentucky (TANK) and the Southwest Ohio Regional Transit Authority (SORTA).

Figure 6 - Transit Default Costs	
On-street Transit Station	\$3,000,000
Off-street Transit Station w/ amenities	\$6,000,000
Off-street basic park and ride	\$800,000
40' standard transit bus	\$435,000
40' hybrid transit bus	\$615,000
Compact transit vehicle	\$98,000

- **Bike and Pedestrian**

Cost estimates in Figure 7 are for bicycle facility and sidewalk construction only and do not include design, engineering, property acquisition, utility relocation or operation and maintenance. Many pedestrian projects will be incorporated and included as elements of roadway improvement projects but as necessary, the costs for sidewalks will be estimated at \$310,000 per mile for a 5 foot walk.

Figure 7 - 2015 OKI Bicycle/Pedestrian Facility Construction Cost Estimates ^{vii}		
Facility	Component cost / mile	Estimated cost / mile
On-Road ^{viii}		
Bike lanes (striping)	Center Line -	\$4,800
	Bike lane symbols -	\$14,100
	Shared lane markings -	\$2,149
		\$21,049
Wide curb lanes (14+ ft.)	Added pavement	\$200,000
Shared lane markings	Pavement markings	\$3,960
Off-Road		
Off road shared use path ^{ix}	10 ft. paved	\$481,140
Sidewalk – 5 ft. concrete ^x	Both sides (10 ft.)	\$620,000

- **ITS**

Individual project costs were estimated during the development of the *OKI ITS Architecture Update and Strategic Plan*.

RECOMMENDED PLAN COST DISTRIBUTION

The individual recommended projects have been identified elsewhere. A summary and the associated costs are provided below in Figures 8, 9, 10 and 11. These figures do not include the approximate two billion dollars programmed in the current 2016 to 2019 OKI TIP.

Figure 8 - Regional Summary of Recommended Plan Costs by Project Type	
Project Type	Cost Estimate in Millions of Dollars
Widening/Relocation	\$1701
Maintenance/Reconstruction	\$239
Bridge	\$3364
Traffic Operations	\$410
ITS	\$75
Transit	\$529
Bike/Ped	\$200
Freight	\$16
TOTAL	\$6,532

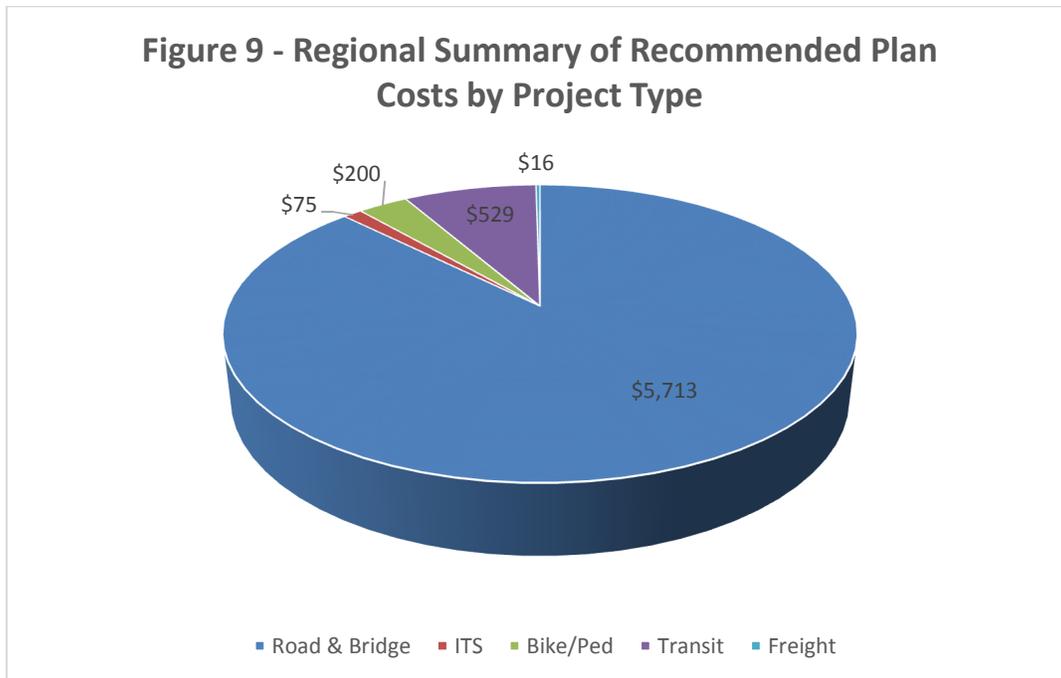
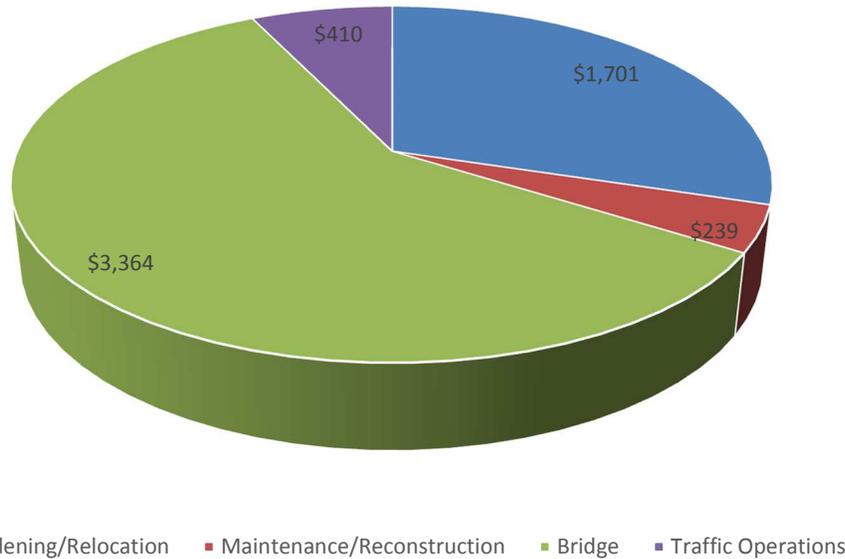


Figure 10 - Distribution of Plan Cost for Roadway Project Types (\$ millions)



Major Projects

The region has one project that is expected to be a major project and that is the replacement and rehabilitation of the Brent Spence Bridge (BSB). A major project is defined by the Federal Highway Administration as one expected to cost over \$500 million. The BSB is considered the most important project for the region and will be constructed.

To date, more than \$35 million has been committed from sources at the state and federal level. These funds are listed in the OKI TIP and are committed to preliminary engineering, environmental and the purchase of right of way. Project development continues. A preferred alternative has been identified and will continue through the public evaluation process. A cost estimate review was completed in March 2012. A Finding of No Significant Impact (FONSI) was signed by the Ohio Division of FHWA on 8/9/2012. A financial plan needs to be completed before advancing forward. The BSB is included in this fiscally constrained plan update. The outcome of the financial plan for the bridge project may warrant future adjustments to the fiscal constraint analysis. The BSB cost is \$2.63 B billion and these costs are distributed between Kentucky and Ohio per the current bi-state agreement (\$1,150,600,000 cost estimate for Ohio, \$1,481,300,000 cost estimate for Kentucky). [source: BSB Initial Financial Plan 12/31/13]

According to 23 CFR 450.322(f)(10), "The financial plan shall include recommendations on any additional financing strategies to fund projects and programs included in the metropolitan transportation plan. In the case of new funding sources, strategies for ensuring their availability shall be identified." Though construction funding has not been secured for this project, the

regional effort to secure earmark funding has been unwavering. The significance of the Brent Spence Bridge project corridor is such that the likelihood of a successful procurement of the needed funding is strongly anticipated due to the project's impact on regional, national and international goods and passenger movement.

FISCAL CONSTRAINT

Federal legislation requires the OKI 2040 Regional Transportation Plan to demonstrate that its recommendations are fiscally constrained, that is, financial resources can be reasonably expected to be available to cover the costs of the plan. As outlined above in the Funding Revenue and Cost Expectations section, approximately \$17.5 billion is estimated to be available for all transportation expenditures in the OKI region over the life of the plan. The estimated cost of the recommendations of this plan is an estimated \$16.71 billion. Because the total value or cost of recommended projects in this plan (Figure 11) is less than the discretionary resources reasonably expected to be available, this plan demonstrates financial constraint.

Figure 11 - Fiscal Constraint by State

Breakdown by State		Available for Plan after TIP 2020 - 2040
Ohio	OH New HWY Capacity Total	\$2,907,848,876
	OH HWY O&M Total	\$3,255,341,314
	OH Non-Hwy Total	\$186,134,199
	OH Transit Capital	\$805,098,456
	OH Transit Operating	\$2,070,487,818
	Total OH Region Expenditures	\$9,726,170,395
	Ohio Discretionary Available	\$3,899,081,532
	Ohio Project Amount	\$3,324,584,919
	Difference	\$574,496,613

Kentucky	KY New HWY Capacity Total	\$2,800,023,484
	KY O&M Total	\$1,600,795,908
	KY Non-Hwy Total	\$272,151,131
	KY Transit Capital	\$237,983,989
	KY Transit Operating	\$783,666,323
	Total KY Region Expenditures	\$5,697,717,945
	KY Discretionary Available	\$3,310,158,603
	KY Plan Project Amount	\$3,148,043,084
	Difference	\$162,115,519

Indiana	IN New HWY Capacity Total	\$70,104,188
	IN O&M Total	\$168,352,826
	IN Non-Hwy Total	\$9,751,735
	IN Transit	\$0
	Total IN Region Expenditures	\$248,208,749
	Indiana Discretionary Available	\$79,855,923
	Indiana Plan Project Amount	\$72,686,992
	Difference	\$7,168,921