Technical Memorandum No. 9

Finance

Final

Subtask 9.1

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1. OHIO FINANCE

This technical memorandum summarizes baseline projections prepared for Federal/State Highway revenues and Federal/State Transit revenues as part of *Access Ohio 2040*. The projections correspond to the dollar amounts available to address state system highway needs and the Department's contribution toward metropolitan and rural transit needs (based on historic participation). **Table 1-1** is a summary of total expected revenues in constant 2011 dollars:

Table 1-1: Total Expected Baseline Revenues
(In Millions – Constant 2011 Dollars)

Mode	Total Available Revenue FY 2014 - FY 2040
Highway (Federal & State)	$36,538
Transit (Federal & State)	$4,482
Total	**$41,020**

1.1 Baseline Projection -- Highways

The *Access Ohio 2040* 27-year financial forecast at baseline is a planning-level projection of the state DOT revenues available for highway capital programming. It is largely a summation of information provided by ODOT and a projection to 2040 based on ODOT's revenue growth assumptions.

The Department developed a forecast of highway-oriented revenues, which the consultant team reformatted and deflated according to standard industry practice (assuming 2.5 percent inflation, based on historic consumer price index rates, see **Section 1.3**).

The State highway revenue forecast includes anticipated capital expenditures only, and operations expenditures are not included. Federal-aid highway revenues were similarly reduced to account for operations costs and for amounts dedicated to a variety of purposes not directly related to state-system capital investments and other purposes/investment types (e.g., local agencies, enhancements, transit, bicycle/pedestrian, planning, etc.).

The Federal-aid forecast is based on full apportionments to Ohio under the *Moving Ahead for Progress in the 21st Century Act (MAP-21).* Information was obtained from the FHWA web site (http://www.fhwa.dot.gov/map21/summary.cfm) on 3-12-13. Apportionments are distributions of Federal funds using a formula dictated by law and do not represent the actual amount received by Ohio, because spending is capped by each state's annual obligation authority. Federal funding for transportation changed significantly with the passage of MAP-21 (July 2012). MAP-21 is notable on two fronts:

- **Funding** – the Act provided Federal support for transportation through FY 2014;
- **Structure** – MAP-21 created a streamlined and performance-based surface transportation program and builds on many of the ISTEA-era transit, bike and enhancement initiatives.

MAP-21 consolidated nearly 100 Federal funding programs into fewer than 30, with the following being Core Programs:

- National Highway Performance Program (NHPP) – consolidates former Interstate Maintenance (IM), National Highway System (NHS) and on-system Bridge programs into an "enhanced" NHS;
- Surface Transportation Program (STP) – now includes former Highway Bridge (off-system), Congestion Pricing, Recreational Trails, Border Infrastructure, and Truck Parking Facilities programs;
- Congestion Mitigation and Air Quality Improvement Program (CMAQ);
- Highway Safety Improvement Program (HSIP);
- Railway-Highway Crossings (set-aside from HSIP); and
- Metropolitan Planning.

It created two new formula programs:

- Construction of Ferry Boats and Ferry Terminal Facilities – replaces a similarly purposed discretionary program;
- Transportation Alternatives (TA) – a new program encompassing activities funded under the Transportation Enhancements, Recreational Trails, Safe Routes to School, and other discretionary programs under SAFETEA-LU.

ODOT's Division of Finance provided gross revenue projections that align with historic revenue growth rates. State revenues were grown beginning in 2013, while Federal funds were grown beginning in 2015, at the rates shown in **Table 1-2**:

Table 1-2: Federal/State Revenue Growth Rates

Description	Federal $	State $
Historic Growth	3%/year	1%/year

ODOT also provided projections to 2040 for debt service (state bonds and GARVEE retirement) expense, operations (portions from both state revenues and federal aid), Federal-aid takedown (Federal funds dedicated to purposes other than addressing state system deficiencies), and State/Federal bonds (an additional revenue source).

Table 1-3 summarizes ODOT's baseline 27-year historic forecast.

Table 1-3: *Access Ohio 2040* Historic Highway Revenue Forecast Summary
(In Millions – Current Year Dollars except "Constant" line)

Funding	Total Available Revenue FY 2014 - FY 2040
State Revenue	$37,894
Deduction - State Debt Service	($4,669)
Subtotal State	**$33,225**
Deduction - Operations	($24,880)
Net State Revenue	**$8,345**
Federal aid (highways)	**$53,179**
Deduction - Debt Service	($3,144)
Deduction - Operations (Federal)	($1,350)
Deduction - Dedicated Federal Takedown	($12,823)
Net Federal Aid (highways)	**$35,862**
Additional Revenue (State & Federal Bonds, Carryover Balance)	**$10,187**
Grand Total (Current Dollars)	**$54,394**
Total Available (Constant 2011 Dollars)	**$36,538**

Several points to note:

- ODOT's projections for operations expenditures, debt service and takedowns – such as support for non-state elements - are subtracted to produce an estimate of state capital investments only.
- Three billion of the $10.2 billion identified as additional revenue is generated from bond revenues and other innovative funding sources.
- $1 billion in "carryover" is included (FY 13 carryover to FY 14).

ODOT's historic revenue forecast estimates that $36.5 billion will be available from 2014 to 2040 (constant 2011 dollars). From 2004 to 2012, ODOT state gas tax revenues increased at an average of 0.8% per year and Federal gas tax revenue increased at an average of 3% per year. ODOT feels these revenue estimates provide a reasonable fiscal environment to advance the Access Ohio 2040 Plan. ODOT recognizes that there is some risk with these growth assumptions, as they are based on historical averages and are not necessarily indicative of future trends. The final AO40 Plan will address these risks.

1.1.1 ODOT Support of Local Transportation Programs

Under the MAP-21 structure, Ohio expects to receive $1.3 billion in Federal highway aid in FY2014, the first year of *Access Ohio*, through the major MAP-21 program categories shown in **Table 1-4**.

Table 1-4: MAP-21 FFY 2014 Ohio Apportionments
(In Millions – Current Year Dollars)

MAP-21 Category	FY 2014 Apportionment
NHPP	$763.4
STP	$351.1
CMAQ	$96.6
HSIP	$75.3
Metro Planning	$11.3
Railway-Highway Crossings	$8.6
Total	**$1,306.3**

Revenue for the Transportation Alternatives (TA) program, described earlier, must be set aside proportionately from the state's National Highway Performance Program (NHPP), Surface Transportation Program (STP), Congestion Mitigation and Air Quality Improvement Program (CMAQ), Highway Safety Improvement Program (HSIP), and Metropolitan Planning apportionments. Information on the TA Program can be found on FHWA's MAP-21 site, here: http://www.fhwa.dot.gov/map21/tap.cfm The 2014 TA Program apportionment for Ohio is not currently published. The 2013 TA apportionment to Ohio is approximately $28 million. The 2014 amount is expected to be similar to 2013; nationally, the TA Program is set for $809 million in 2013 and $820 million in 2014.

ODOT shares a significant amount of Federal aid with Ohio's local governments, summarized in the following major programs (dollars based on historic participation and expressed in current amounts, not adjusted to 2011 constant dollars):

- MPO Program and "large cities" (non-MPOs) -- $196.2M in FY2014, $7.3B over the Plan period, from three Federal sources (STP, CMAQ, TA);
- MPO Planning and Research -- $12.4M in FY2014, $492.2M over the Plan period, from Federal STP;
- Municipal Bridge -- $9.2M in FY2014, $336.7M over the Plan period, from Federal STP;
- County Highway Assistance (roads, bridge, safety) -- $64.8M in FY2014, $2.4B over the Plan period, from Federal STP and HSIP;
- Small Cities -- $9.2M in FY2014, $336.7M over the Plan period, from Federal STP;
- Transportation Alternatives -- $11.0M in FY2014, $343.4M over the Plan period, from Federal TA;
- Safe Routes to School -- $5.7M in FY2014, $173.2M over the Plan period, from Federal TA; and
- Transit Assistance -- $20.0M in FY2014, $540M over the Plan period, from Federal STP and CMAQ.

Details regarding these major programs (and other ODOT local programs), are included in the *ODOT Program Resource Guide* (2013) located at: http://www.dot.state.oh.us/Divisions/Planning/LocalPrograms/Documents/ODOT%20Program%20Resource%20Guide.pdf

In summary, ODOT expects to share more than $11.8 billion (current year dollars) in Federal aid with Ohio's local governments over the 27-year *Access Ohio* planning horizon. While these revenues are part of the ODOT revenue stream, they are made available to local governments and to public transit authorities for use primarily on non-ODOT facilities and are subject to the administrative rules set forth in the *ODOT Program Resource Guide* referenced above. **The local government support dollars are not included in the baseline revenue forecast, as noted above.** It should also be noted that local agencies are responsible for providing the non-Federal match needed to leverage these funds.

1.2 Baseline Projection – Transit

Transit services in Ohio are funded primarily through the Federal Transit Administration (FTA). While these are not ODOT funds, it is important to quantify the level of funding available in Ohio for transit expenditures as part of the long-range transportation planning process. ODOT has historically participated in funding for transit through two primary sources: General Revenue Fund support (about $7.3 million annually from General Funds, of which $400,000 is used for administration) and about $20 million annually in Federal highway funding (STP and CMAQ). The following summary presents a baseline revenue forecast of Federal transit dollars and state transit contributions (based on historic participation).

Table 1-5 presents historic FTA apportionments to Ohio throughout the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU), including continuing resolutions (years 2006 to 2011). Apportionments are distributions of Federal funds using a formula dictated by law and do not include the non-Federal match. As shown, the majority of FTA revenues received by Ohio during SAFETEA-LU were urbanized area formula grants, which provide capital and operating assistance to urbanized areas and do not pass through the ODOT. In Ohio the metropolitan areas of Cincinnati, Cleveland, and Columbus receive the majority of FTA funds.

Table 1-5: FTA Apportionments to Ohio via SAFETEA-LU

(Current Year Dollars)

FTA Apportionment Line Item		FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012
5307	**Urbanized Area Formula Program – 1m and over**	**$52,470,554**	**$55,635,328**	**$58,782,833**	**$61,209,354**	**$59,658,331**	**$58,456,255**	**$56,721,594**
	Cincinnati, OH--KY--IN	$16,462,854	$17,033,068	$18,161,896	$18,916,749	$18,732,058	$18,029,904	*$17,239,314*
	Cleveland, OH	$25,584,797	$27,673,490	$29,071,296	$30,073,102	$28,569,002	$27,556,074	*$26,209,289*
	Columbus, OH	$10,422,903	$10,928,770	$11,549,641	$12,219,503	$12,357,271	$12,870,277	*$13,272,991*
5307	**5307 Urbanized Area Formula Program - from 200k - 999,999**	**$31,516,897**	**$32,519,855**	**$34,892,343**	**$36,313,243**	**$35,783,613**	**$35,417,698**	**$34,812,483**
	Akron, OH	$5,924,071	$6,012,478	$6,229,946	$6,619,111	$6,561,010	$6,762,735	*$6,622,834*
	Canton, OH	$3,280,524	$3,462,625	$3,724,977	$3,884,604	$3,818,376	$3,634,052	*$3,535,224*
	Dayton, OH	$13,469,037	$13,892,841	$15,152,973	$15,662,602	$15,103,536	$14,462,385	*$14,149,359*
	Toledo, OH--MI	$5,731,970	$5,842,150	$6,314,733	$6,649,282	$6,634,280	$6,611,773	$6,266,205
	Youngstown, OH--PA	$3,111,295	$3,309,761	$3,469,714	$3,497,644	$3,666,411	$3,946,753	*$4,238,861*
5307	**Urbanized Area Formula Program – less than 200k**	**$9,002,063**	**$9,376,620**	**$10,155,085**	**$10,551,310**	**$10,547,336**	**$10,528,973**	**$10,424,067**
	Huntington, WV--KY—OH	$348,036	$365,291	$396,483	$421,804	$420,651	$421,789	*$421,383*
	Lima, OH	$746,162	$783,147	$850,016	$904,304	$901,850	$904,286	$906,699
	Lorain--Elyria, OH	$2,524,302	$2,613,598	$2,825,683	$2,739,422	$2,731,851	$2,739,248	*$2,746,565*
	Mansfield, OH	$797,202	$836,717	$908,159	$966,161	$963,543	$966,144	*$968,721*
	Middletown, OH	$1,040,812	$1,092,416	$1,185,703	$1,261,424	$1,257,961	$1,261,364	*$1,264,732*
	Newark, OH	$1,038,556	$1,054,173	$1,133,075	$1,219,836	$1,241,426	$1,197,898	$1,072,706
	Parkersburg, WV--OH	$244,902	$257,045	$278,996	$296,814	$295,994	$296,796	$295,096
	Sandusky, OH	$528,210	$554,395	$601,733	$640,163	$638,418	$640,143	$641,851
	Springfield, OH	$1,008,338	$1,058,335	$1,148,714	$1,222,071	$1,218,709	$1,222,006	*$1,225,269*
	Weirton, WV--Steubenville, OH--PA	$420,524	$441,368	$479,055	$509,651	$508,268	$509,640	$508,030
	Wheeling, WV--OH	$305,019	$320,135	$347,468	$369,660	$368,665	$369,659	$373,015
5309	**Capital Investment – Fixed Guideway**	**$18,543,674**	**$19,670,212**	**$20,675,080**	**$21,037,000**	**$20,640,532**	**$20,403,510**	**$19,920,799**
	Cleveland, OH	$13,221,238	$13,568,489	$13,744,587	$14,086,725	$14,016,450	$13,904,400	*$13,806,617*
	Dayton, OH	$5,322,436	$6,101,723	$6,930,493	$6,950,275	$6,624,082	$6,499,110	*$6,114,182*
5309	**Bus and Bus Facility**	**$24,919,212**	**$15,792,875**	**$21,696,342**	**$21,116,235**	**$6,092,200**	**$0**	**$0**
Other Apportionment Line Items (5311,5311(b)(3), 5310, 5303, 5304, 5316, 5317)		**$57,386,630**	**$35,183,475**	**$37,544,162**	**$40,309,556**	**$38,602,656**	**$38,652,991**	**$38,910,682**
Total FTA Apportionment to Ohio		**$193,839,030**	**$168,178,365**	**$183,745,845**	**$190,536,698**	**$171,324,668**	**$163,459,427**	**$160,789,625**

- *Source (2006 - 2011 Apportionments): http://www.fta.dot.gov/grants/12853_88.html*

Note: The full apportionment amount for multi-state urbanized areas is shown in each state that the UZA falls within.

The same historic annual growth rate of 3.0 percent used to forecast highway revenues was used to forecast Federal transit apportionments for *Access Ohio*. Also, Federal highway revenues flexed[1] for transit and state support from the General Revenue Fund were assumed to remain flat over the life of the Plan. This plan assumption is based on historic participation and does not reflect a commitment from ODOT or the state of Ohio to continue these contributions.

[1] Flexible funds are legislatively specified funds that may be used either for transit or highway purposes. In this case, "flexed" indicates that flexible Federal Highway funds from eligible programs were transferred for transit expenditures.

Table 1-6 presents the estimated forecast of:

1) FTA apportionments to year 2040 (in current dollars) using the limited MAP-21 information available from the FTA website shortly after MAP-21 was passed. The 3.0 percent annual growth rate was applied to the estimated year 2014 MAP-21 revenues. The estimated forecast totals nearly $6.1 billion between FY 2014 and FY 2040.
2) State transit support from the General Revenue Fund. After deducting the portion used for ODOT administration, the remaining $6.9M per year was held constant to 2040. The estimated forecast totals nearly $186.3M between FY 2014 and FY 2040.
3) Federal highway funds (STP and CMAQ) flexed for transit use. The FY 2012 and FY 2013 amount of $20M was assumed constant for FY 2014 to FY 2040, totaling $540M over the life of the Plan.

In current dollars (not adjusted for inflation), the total of transit revenue expected from Federal and State sources between FY 2014 and FY 2040 is $6.8 billion. **Adjusted for inflation, the total revenue expected to be available for Ohio transit from FY 2014 to FY 2040 is $4.5 billion**.

Largely, FTA revenues are for capital expenditures. However, Section 5307, 5310, and 5311 funds may be used for operating expenses, at a higher non-Federal match (50% instead of 20%). Adequate operating cash is a constant challenge for transit agencies and the additional match requirement to obtain Federal operating assistance is an additional burden. “Fact Sheets” for each of the FTA programs in MAP-21 (shown in **Table 1-6**) can be found on the web at: http://fta.dot.gov/map21/.

In 2012 and 2013, the majority of the $20M in Federal highway funds flexed for transit went to Ohio’s eight large urban operations, with $6M being distributed by urban formula and $14M distributed via a discretionary application process. These dollars are used primarily for state of good repair projects.

The majority of the State support historically provided for transit from the General Revenue Fund goes to rural transit operations. These dollars may be used for operations.

Table 1-6: Estimated Forecast of Transit Revenues FY 2014 to FY 2040

(in Current Year Dollars except "Constant 2011 Dollars" column)

FTA Apportionments Line Item	FY 2014 (Current Dollars)	FY 2020 (Current Dollars)	FY 2030 (Current Dollars)	FY 2040 (Current Dollars)	Estimated Total FY 2014 - FY 2040 (Current Dollars)	Estimated Total FY 2014 - FY 2040 (Constant 2011 Dollars)
SECTION 5303 METROPOLITAN TRANSPORTATION PLANNING PROGRAM	$2,949,015	$3,521,278	$4,732,303	$6,359,819		
SECTION 5304 STATEWIDE TRANSPORTATION PLANNING PROGRAM APPORTIONMENTS	$612,895	$731,829	$983,517	$1,321,765		
SECTION 5307 AND SECTION 5340 URBANIZED AREA APPORTIONMENTS						
Amounts Apportioned to Urbanized Areas 1,000,000 or more in Population	$47,798,163	$57,073,506	$76,702,020	$103,081,101		
Amounts Apportioned to Urbanized Areas 200,000 to 1 million in Population	$30,261,283	$36,133,555	$48,560,476	$65,261,219		
Amounts Apportioned to State Governors for Urbanized Areas 50,000 to 199,999 in Population	$8,200,554	$9,791,891	$13,159,482	$17,685,244		
FTA FY 2013 SECTION 5307 OPERATING ASSISTANCE SPECIAL RULE OPERATOR CAPS (Data Not Yet Available)						
SMALL TRANSIT INTENSIVE CITIES PERFORMANCE DATA AND APPORTIONMENTS (Section 5307 Component, Values included in Section 5307)	$313,218	$373,999	$502,623	$675,484		
SECTION 5310 ENHANCED MOBILITY OF SENIORS AND INDIVIDUALS WITH DISABILITIES APPORTIONMENTS						
Amounts Apportioned to Urbanized Areas 200,000 or more in Population	$6,009,843	$7,176,067	$9,644,034	$12,960,776		
Amounts Apportioned to State Governors for Urbanized Areas 50,000 to 199,999 in Population	$1,280,952	$1,529,523	$2,055,551	$2,762,489		
Amounts Apportioned to State Governors for Nonurbanized Areas Less than 50,000 in Population	$2,114,771	$2,525,147	$3,393,586	$4,560,696		
SECTION 5311 AND SECTION 5340 RURAL AREA APPORTIONMENTS	$19,855,163	$23,708,103	$31,861,708	$42,819,472		
SECTION 5311(b)(3) RURAL TRANSIT ASSISTANCE PROGRAM (RTAP) APPORTIONMENTS	$243,759	$291,061	$391,162	$525,689		
SECTION 5311(c)(2) APPALACHIAN DEVELOPMENT PUBLIC TRANSPORTATION ASSISTANCE PROGRAM APPORTIONMENTS	$838,721	$1,001,477	$1,345,901	$1,808,779		
SECTION 5311(c) PUBLIC TRANSPORTATION ON INDIAN RESERVATIONS ILLUSTRATIVE FORMULA ALLOCATIONS (Data Not Yet Available)						
SECTION 5337 STATE OF GOOD REPAIR APPORTIONMENTS						
High Intensity Fixed Guideway Sate of Good Repair	$18,785,130	$22,430,428	$30,144,620	$40,511,848		
High Intensity Motorbus State of Good Repair	$59,890	$71,511	$96,105	$129,157		
SECTION 5339 BUS AND BUS FACILITIES FORMULA APPORTIONMENTS						
Amounts Apportioned to Urbanized Areas 200,000 or more in Population	$8,114,546	$9,689,192	$13,021,464	$17,499,759		
Amounts Apportioned to State Governors for Urbanized Areas 50,000 to 199,999 in Population	$827,390	$987,947	$1,327,718	$1,784,342		
State/Territory Allocation	$1,087,554	$1,298,597	$1,745,205	$2,345,410		
Total FTA Apportionments	$149,039,631	$177,961,113	$239,164,855	$321,417,566	$6,067,348,742	**$4,002,824,139**
State Transit Support (General Revenue Fund)	$6,900,000	$6,900,000	$6,900,000	$6,900,000	$186,300,000	**$122,908,072**
Federal Highway Revenues "Flexed" for Transit	$20,000,000	$20,000,000	$20,000,000	$20,000,000	$540,000,000	**$356,255,282**
Grand Total	$175,939,631	$204,861,113	$266,064,855	$348,317,566	$6,793,648,742	**$4,481,987,493**

Source: Year 2013 and 2014 revenues estimated using http://fta.dot.gov/12308_14875.html and http://images.politico.com/global/2012/07/120703_transit_apportionment.html.

Section 5310 and Section 5339 revenues include entire apportionments for multi-state urbanized areas.

1.3 Inflation Indices

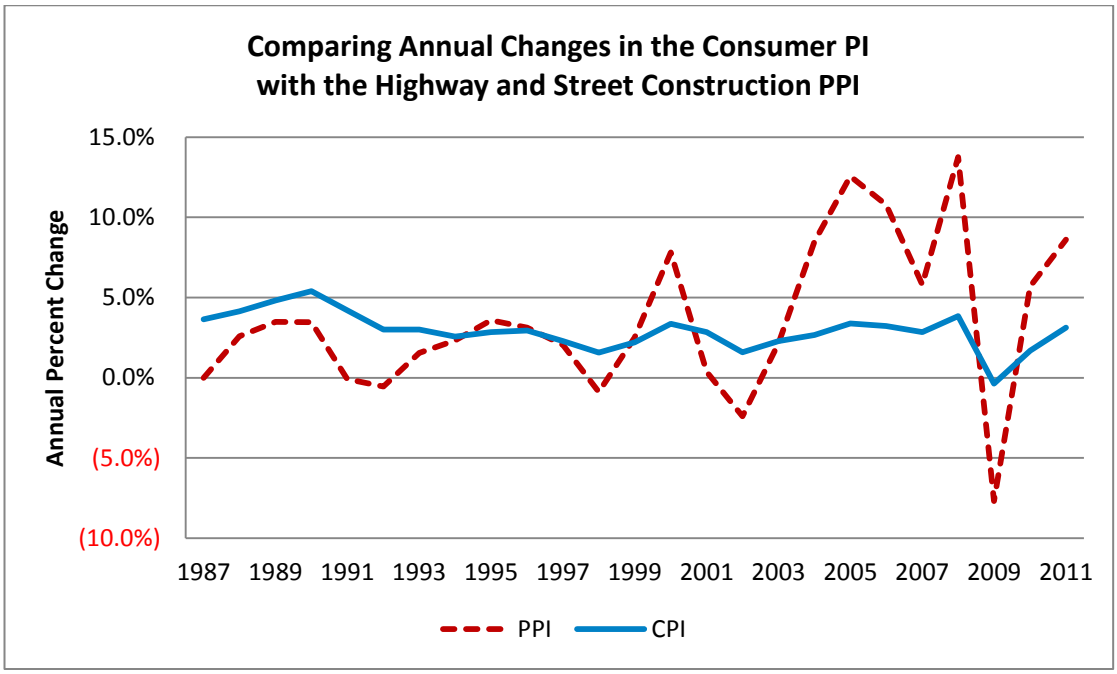
An important aspect of plan-level financial forecasting is to deflate forecasted revenues to a base year (2011 for *Access Ohio 2040*), which accounts for expected future inflation. Because infrastructure needs are developed using today's costs, this calculation allows a direct comparison between needs and revenues. There are several sources of information on inflation and each is appropriate for specific purposes. While there is not a consensus source for state capital investment projections, the Federal government and others provide guidance on the topic; states strive to make an educated estimate to present to policy-makers.

Calculating the constant dollar value (base year) of forecasted revenue streams requires making an assumption about future inflation trends. Various possible indices for making inflation adjustments have been examined, including:

- Consumer Price Index for all Urban Consumers (CPI),
- Producer Price Index for Highway and Street Construction (PPI) – also known as Construction Price Index,
- Core Producer Price Index, and
- GDP Implicit Price Deflator.

Figure 1-1 compares the CPI and PPI annual change for the period 1987-2011:

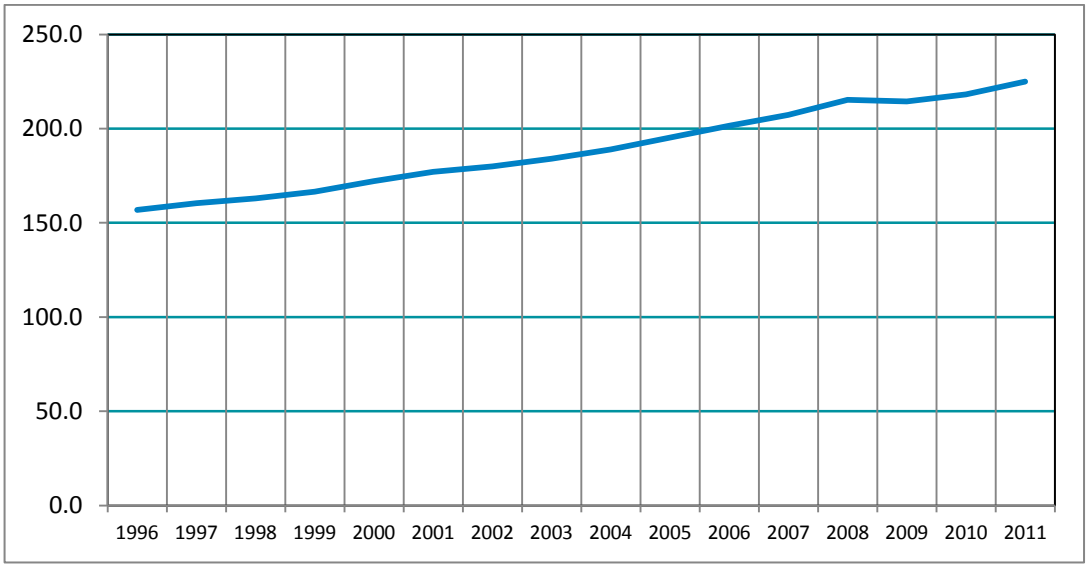
Figure 1-1: CPI and PPI Annual Change



Long-term trends for the various measures are similar, although the indices more specifically targeted to highway and street construction are more volatile. The selection of an inflation-adjustment metric should be driven by the goal of enabling the most accurate revenue and expenditure forecasts over a very long time horizon – there should be more concern with capturing aggregate long-term growth than predicting short-term movements.

The Consumer Price Index has been the standard for documenting historic inflation for several decades. Less volatile than the other indices, it is accepted by FHWA as a measure of past and future inflation. **Figure 1-2** shows US Consumer Price Index since 1996:

Figure 1-2: US Consumer Price Index 1996-2011



This equates to an average annual rate of 2.43 percent. Based on this information, ODOT elected to use a future deflator of 2.5 percent for *Access Ohio 2040*.

1.4 Summary of Baseline Highway and Transit Revenue Projection

The grand total available for highway planning purposes at baseline, modeled for the Plan, is $54.4 billion (current dollars), as shown in **Table 1-3**. Once these current revenues are adjusted to account for future inflation and expressed in constant base year dollars, their value in year 2011 dollars is reduced by more than 30 percent, depending on the inflation assumptions. The Constant 2011 Dollars line in **Table 1-3** uses a 2.5 percent annual inflation adjustment based on Consumer Price Index (CPI) history. Using these assumptions, the current revenues are reduced to $36.5 billion.

1.5 Summary of Revenues-to-Needs Gap

Ohio's estimated roadway and transit needs between the years 2014 and 2040 are $55 billion. With an estimated highway and transit revenues of $41 billion, Ohio is facing a $14 billion dollar gap to fund the state transportation system's current and future needs.