



Charting a Course to 2040

SOUTH CAROLINA

MULTIMODAL TRANSPORTATION PLAN

Technical Memorandum

REVENUE FORECASTS

Prepared for:



Prepared by:



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1 INTRODUCTION

This technical memorandum documents the development and summarizes the results of baseline highway and transit revenue forecasts for *South Carolina’s Multimodal Transportation Plan (MTP)*. The purpose of the baseline revenue forecast is to compare expected revenues with modal needs and identify the likely funding gap over the transportation planning horizon. The planning horizon for the current MTP is fiscal year (FY) 2011 to 2040 (29 years). The Federal fiscal year (October 1–September 30) and state fiscal year (July 1–June 30) are assumed to align in this planning exercise.

A reasonable revenue forecast is also important for developing realistic, practical investment strategies for South Carolina’s future.

The result of the baseline revenue forecast is shown in **Table 1-1** in constant 2011 or “real” dollars, which accounts for the effects of future inflation. Over the 29 year planning horizon, \$27.63 billion is expected to be available for highway and transit improvements.

Table 1-1: Baseline Revenue Forecast

Revenue Source	Total 2011-2040 (Billions, 2011 Dollars)	Percent of Total
Federal Highway Revenue	\$13.97	50.6%
State Highway Revenue	\$5.48	19.8%
Federal Transit Revenue	\$1.01	3.7%
State Transit Revenue	\$0.04	0.1%
State Infrastructure Bank Revenue	\$2.04	7.4%
Special Purpose Local Option Sales Tax Revenue	\$4.24	15.3%
County Fund Revenue	\$0.85	3.1%
Total	\$27.63	100.0%

Source: FHWA data, FTA data, SCDOT data, and calculations using these sources.

This document provides the following supporting and additional information:

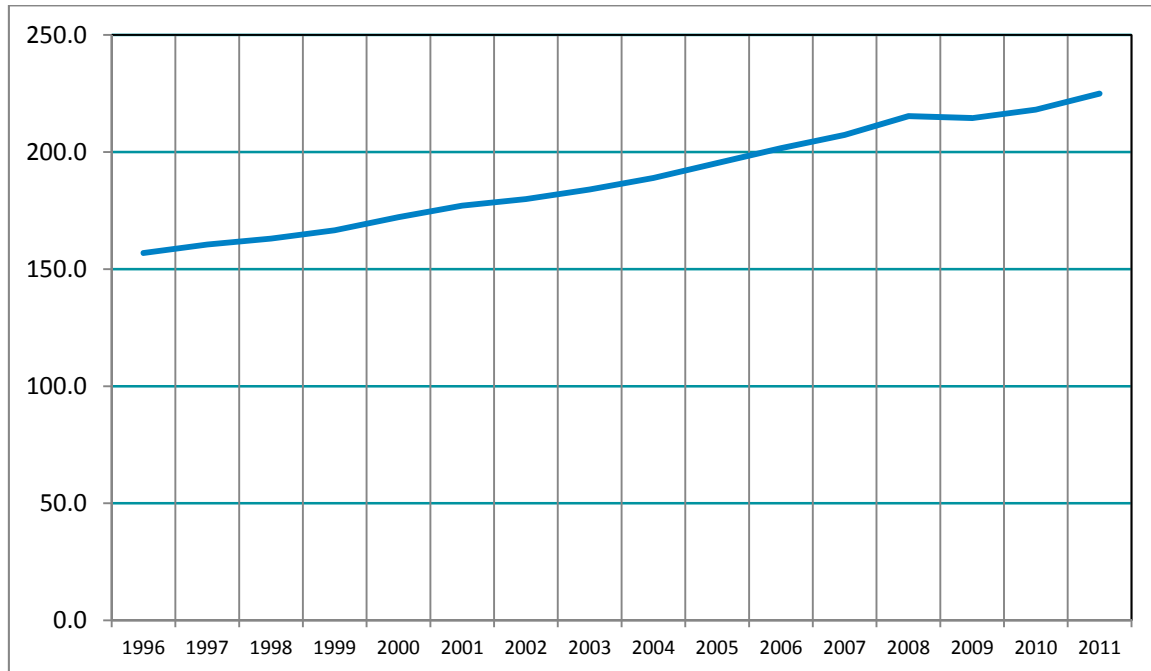
- Section 1.1, an explanation of inflation assumptions;
- Section 1.2, a summary of previous similar studies;
- Section 2, highway baseline revenue forecast details;
- Section 3, transit baseline revenue forecast details;
- Section 4, a summary of baseline revenue forecast results;
- Section 5, an overview of three alternative revenue futures; and
- Section 6, a description of next steps.

1.1 Inflation Indices

It is important in plan-level financial forecasting to account for inflation by deflating estimated future revenues to a base year. Because infrastructure needs were developed for the SC MTP in 2011 dollars, the conversion of forecasted revenues to constant 2011 dollars allows for a direct comparison between needs and revenues, identifying the funding gap.

The Consumer Price Index (CPI) has been a commonly-used source for documenting historic “inflation” for several decades. Less volatile than indices based on historic construction costs, it is accepted by FHWA as a measure of past and future inflation for long-range state planning purposes. **Figure 1-1** shows the US Consumer Price Index since 1996. This equates to an average annual rate of 2.4 percent. Considering this information, South Carolina selected a 2.0 percent annual deflator for the MTP revenue baseline work.

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



Source: Bureau of Labor Statistics

The expected loss in buying power over the 29-year planning horizon is demonstrated on Figures 2-1, 3-1, and 4-1.

1.2 Previous Studies

The on-going MTP work is an update to SCDOT's 2008 Multimodal Transportation Plan¹. The 2008 plan cited a \$29 billion dollar shortfall in meeting highway and mass transportation needs over the 20 year planning horizon.

Following the 2008 MTP, in December 2012, the Transportation Infrastructure Task Force (TITF) produced a report,² sanctioned and approved by the SCDOT Commission, which reviewed in detail all state highway programs; the TITF initiative was not intended to recommend any particular strategy to address the \$29 billion dollar funding gap mentioned above, but to offer alternatives for consideration by the state's leadership.

¹ http://www.scdot.org/inside/planning_multi.aspx

² <http://www.scdot.org/inside/titf.aspx>



2 HIGHWAY REVENUE BASELINE FORECAST

Federal and state highway revenue sources comprise 96 percent of the \$27.63 billion revenue baseline total cited in **Section 1**. The following sections present details on the sources, historic levels, and future assumptions of these revenue sources.

2.1 Federal Highway Revenue History and Assumptions

Federal aid is made available for South Carolina's highways by the \$0.184 per gallon (24.4 cents per gallon for diesel fuel) charged at the pump nationally and through Federal authorizing legislation. SAFETEA-LU³, a six-year Federal transportation bill, provided Federal funding from 2005 to 2009 and for 2010 to 2012 through extensions. MAP-21⁴, the most recent Federal transportation legislation, was signed into law by President Obama on July 6, 2012; MAP-21 is a two-year authorization bill.

Federal highway apportionments⁵ to South Carolina by program category are shown in **Table 2-1** for FY 2005 through FY 2012 in current year dollars (not adjusted for inflation). On average, Federal highway revenues to South Carolina have grown over 2 percent per year from 2005 to 2012.

MAP-21 created a streamlined and performance-based surface transportation program, building 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 core programs:

- National Highway Performance Program (NHPP);
- Surface Transportation Program (STP);
- Congestion Mitigation and Air Quality Improvement Program (CMAQ);
- Highway Safety Improvement Program (HSIP);
- Railway-Highway Crossings (set-aside from HSIP); and
- Metropolitan Planning.

MAP-21 also created two new formula programs: Construction of Ferry Boats and Ferry Terminal Facilities and the Transportation Alternatives Program.

South Carolina received apportionments of \$606.6 million and \$646.3 million for FY 2013 and FY 2014, across MAP-21 program categories as shown in **Table 2-2**.

³ <http://www.fhwa.dot.gov/safetealu/>

⁴ <http://www.fhwa.dot.gov/map21/>

⁵ Apportionments are distributions of Federal funds using formulas dictated by law and do not represent the actual amount received by SCDOT, because spending is capped by each state's obligation authority/limitation.

**Table 2-1: Federal Highway Apportionment under SAFETEA-LU
(In Millions of Nominal Dollars)**

Federal Highway Revenues	2005	2006	2007	2008	2009	2010	2011	2012
Interstate Maintenance	\$80.85	\$82.68	\$88.22	\$88.61	\$89.99	\$102.48	\$97.90	\$95.69
National Highway System	\$80.60	\$81.52	\$85.62	\$89.54	\$90.39	\$102.93	\$98.33	\$96.11
Surface Transportation Program	\$113.19	\$103.15	\$109.91	\$115.61	\$118.26	\$134.67	\$128.65	\$125.75
Highway Bridge/Bridge Replace Rehab	\$54.98	\$52.86	\$50.36	\$49.11	\$47.17	\$53.72	\$51.32	\$50.16
Congestion Mitigation & Air Quality	\$7.89	\$8.08	\$8.47	\$8.62	\$8.76	\$9.97	\$9.53	\$9.31
Appalachian Develop Highway System	\$2.79	\$2.81	\$2.89	\$2.90	\$7.17	\$7.17	\$7.80	\$6.70
Recreational Trails	\$0.93	\$1.07	\$1.16	\$1.25	\$1.21	\$1.21	\$1.32	\$1.13
Safe Routes to School	\$1.00	\$1.19	\$1.58	\$1.95	\$2.43	\$2.43	\$2.65	\$2.27
Metro Planning	\$2.74	\$2.67	\$2.74	\$2.78	\$2.83	\$2.83	\$3.08	\$2.64
Highway Safety Improvement/Safety	N/A	\$18.55	\$19.81	\$24.09	\$23.97	\$27.29	\$26.07	\$25.48
Rail-Hwy Crossings	N/A	\$3.92	\$3.97	\$4.10	\$4.16	\$4.16	\$4.53	\$3.88
Revenue Aligned Budget Authority	N/A	N/A	\$13.47	N/A	N/A	N/A	N/A	N/A
Equity Bonus	\$171.81	\$140.45	\$203.79	\$187.16	\$202.55	\$202.55	\$220.34	\$189.09
Apportioned Total	\$516.77	\$498.95	\$592.02	\$575.72	\$598.89	\$651.41	\$651.51	\$608.22

Source: <http://www.fhwa.dot.gov/safetealu/fundtables.htm>; <http://www.fhwa.dot.gov/map21/summary.cfm>, downloaded 12/13/12 (spreadsheets dated 10/4/12)

Note: The State Planning and Research program was funded by a 2 percent setaside from core programs.

**Table 2-2: Federal Highway Apportionment under MAP-21
(In Millions of Nominal Dollars)**

MAP-21 Program Categories	2013	2014
National Highway Performance Program	\$359.51	\$383.52
Surface Transportation Program	\$165.36	\$176.41
Highway Safety Improvement Program	\$35.48	\$38.11
Railway-Highway Crossings Program	\$4.22	\$4.22
CMAQ Program	\$11.72	\$12.50
Metropolitan Planning	\$2.79	\$2.98
Transportation Alternatives Program	\$15.57	\$15.79
State Planning & Research	\$11.99	\$12.78
Apportioned Total	\$606.65	\$646.31

Source: FY 2013 from <http://www.fhwa.dot.gov/legisregs/directives/notices/n4510761/n4510761.pdf>, FY 2014 estimated.

Key assumptions made in the development of the Federal highway revenue baseline forecast for the MTP include:

- Actual FY 2011 to FY 2014 Federal apportionments were used in the baseline revenue forecasts; these were reduced by 6 percent to reflect obligation limit (a ceiling on annual Federal spending authority). The 6 percent reduction is consistent with South Carolina’s historic obligation limit.
- South Carolina’s FY 2014 MAP-21 obligation limit was held flat to FY 2040 in the baseline revenue forecast of Federal highway funds. In other words, a zero percent average annual growth rate in Federal funds was assumed over the FY 2014 revenue level out to FY 2040. This dismal outlook is due largely to continually increasing vehicle efficiency; vehicles are able to drive further on less motor fuel, the predominant source of Federal highway revenues.
- The baseline forecast of Federal highway revenues also includes \$27 million per year to account for the average August Federal redistribution of obligation authority that SCDOT has historically received.
- The baseline revenue forecast is a projection of revenue available to address modal needs. Therefore, revenues that are not allowable for those purposes are deducted from this exercise. The Federal highway revenue “takedowns” are Federal revenues for metropolitan planning (\$83.6 million over 29 years), state planning & research (\$358.9 million over 29 years), and recreational trails (\$36.4 million over 29 years).

2.2 State Highway Revenue History, and Assumptions

State highway funding originates from four sources; the summary of these sources provided below is largely a summary of information presented in SCDOT’s TITF report, previously mentioned in **Section 1.2**.

- **State Highway Fund (SHF):** Funded predominantly (approximately 86 percent) from the state motor fuel user fee (16 cents per gallon collected in the form of an excise tax). The SHF is used for the operation of SCDOT, including Federal match, routine maintenance and resurfacing, administration, payroll/benefits, capital improvements, transit programs, debt service, transfers to the South Carolina Transportation Infrastructure Bank and the C-Fund, and other operational activities. Budgetary control is by the SCDOT Commission and it is administered under the direction of the Secretary of Transportation. Gasoline tax and motor fuel tax contributions to the SHF totaled \$438.4 million, \$445.3 million, and \$449.3 million in 2011, 2012, and 2013, respectively. Additional revenue (approximately 14 percent of the total SHF) is provided by tolls, interest, miscellaneous property sales, permit fees, etc.
- **Non-Federal Aid Highway Account (NFAHA):** This account was created in 2005 to supplement funding for the maintenance of roads that do not qualify for Federal assistance. Funding comes from driver license fees and penalties, electric power tax, interest, inspection fee on petroleum products, and gasoline and diesel user fees. It may be used only for the maintenance of non-Federal aid roads, and it may not be used for administrative expenses. Budgetary control is by

the SCDOT Commission and it is administered under the direction of the Secretary of Transportation.

The NFAHA provides approximately \$40 million per year for the maintenance of non-Federal aid roads.

- **C-Fund:** This account was first created in 1946. It is controlled by 46 separate County Transportation Committees (CTCs) appointed by each legislative delegation. It is funded from 2.66 cents of the user fee on gasoline plus an annual transfer of \$9.5 million from the SHF to those counties contributing more to the C-Fund than they receive by formula (“donor” counties). Up to 75 percent of each county’s C-Fund allocation may be used for the construction and maintenance of local (non-state) roads. All projects are selected by the individual CTCs.
- **South Carolina Transportation Infrastructure Bank (SCTIB):** Created in 1997, the source of funding is truck registration fees, a portion of auto registration fees, one penny of the user fee on gasoline, local matching funds, and various other sources. The SCTIB Board entertains competitive applications from governmental entities (mostly counties) that are required to pledge local matching dollars for major transportation projects that are financed through the SCTIB, primarily through the issuance of revenue bonds.

Key assumptions made in the development of the state highway revenue baseline forecast for the MTP include:

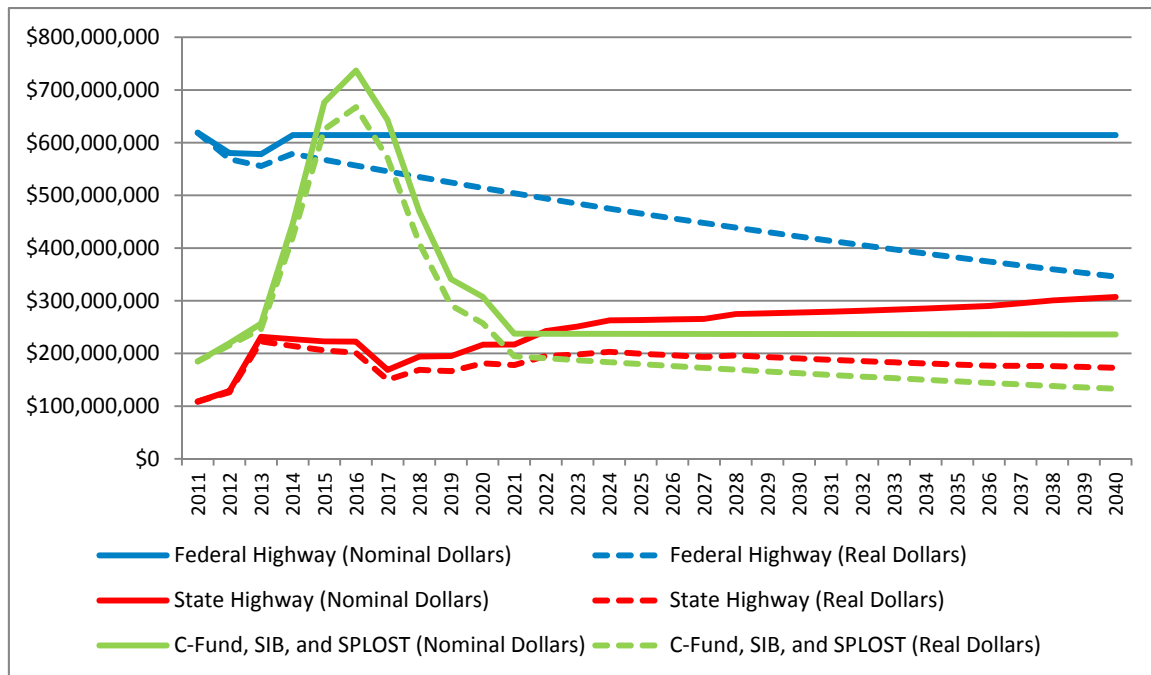
- The baseline revenue forecast includes a conservative estimate of revenue that will likely be invested on the state system from sources outside DOT control (based on historic expenditures). This includes the C-Fund and SCTIB, defined in the previous section, and Special Purpose Local Option Sales Taxes (SPLOST), as follows:
 - \$475.8 million is expected to come from the 25 percent of the C-Fund that is required to be invested on the state system. Another \$634.8 million is expected to be invested on the state system from this source based on historical C-Fund spending;
 - \$2.4 billion is included in the forecast from likely State Infrastructure Bank investments; and
 - SPLOSTs are expected to generate \$5.5 billion in improvements to the state highway system.
- Unique assumed average annual growth rates were applied to the state highway revenue sources, including but not limited to:
 - Negative 0.5 percent for gasoline tax revenue;
 - 3 percent for diesel tax revenue;
 - 4 percent for Cross Island Parkway tolls collections; and
 - 0.15 percent for miscellaneous item (interest, permits, fees, match projects, etc.).
- SCDOT’s projections for operations expenditures, debt service and takedowns, such as support for non-state elements, were subtracted to produce an estimate of state capital investments only. Over the 29 year planning horizon, these deductions include but are not limited to:

- Personnel Costs of \$5.5 billion;
- Employer Contributions of \$2.7 billion;
- Debt Service for Cross Island Parkway & School Bus Bonds totaling \$41.6 million;
- Debt Service for MPO/COG & Interstate Bonded Programs totaling \$563.8 million;
- SCTIB Project Loans totaling \$456.4 million;
- Cross Island Parkway Operating Costs of \$52.7 million; and
- Facility Improvements & Non-Maintenance Operating Costs of \$541.2 million.

2.3 Highway Baseline Summary

Table 2-3 presents detailed results of the highway baseline revenue forecast. This information is also displayed graphically in **Figure 2-1**. As shown, Federal funds will provide the majority of highway revenue (\$13.97 billion for capital improvement over 29-years, real dollars). The programs outside DOT control (C-Fund, STIB, and SPLOST) are expected to deliver \$7.13 billion in state system improvements (real dollars). [Note, as part of this planning exercise, the construction estimates for existing SIB projects were added into the SIB revenue forecast by year of expected completion; this is why a spike is shown in **Figure 2-1** for this line item. After known SIB projects were accounted for, a conservative estimate of \$25 million per year was assumed.] And, \$5.48 billion is expected to be provided from traditional state highway sources (SHF and NFAHA). Inflation will erode the buying power of the available revenues. SCDOT is expected to be able to match Federal funds in the future, due in some part to Federal reimbursements for bonded projects built to Federal standards and by capitalizing on their ability to charge some labor expenses to the Federal program, in effect converting Federal funds to state cash.

**Figure 2-1: Highway Revenue Baseline Forecast FY 2011-2040
(Nominal Dollars vs. Real Dollars)**



Source: FHWA data, SCDOT data, and calculations using these sources.

Table 2-3: Highway Revenue Baseline Forecast FY 2011-2040
(In Millions of Nominal Dollars, Except Where Noted)

FEDERAL REVENUES								
Estimated Federal Highway Revenues (ObLimit)	2011	2012	2013	2014	2020	2030	2040	2011-2040
National Highway Performance Program	-	-	\$337.84	\$360.40	\$360.40	\$360.40	\$360.40	\$10,068.55
Surface Transportation Program (STP)	-	-	\$155.39	\$165.77	\$165.77	\$165.77	\$165.77	\$4,631.22
Highway Safety Improvement Program	-	-	\$33.34	\$35.81	\$35.81	\$35.81	\$35.81	\$1,000.30
Railway-Highway Crossings Program	-	-	\$3.96	\$3.97	\$3.97	\$3.97	\$3.97	\$111.09
CMAQ Program	-	-	\$11.01	\$11.75	\$11.75	\$11.75	\$11.75	\$328.26
Metropolitan Planning	-	-	\$2.62	\$2.80	\$2.80	\$2.80	\$2.80	\$78.18
Transportation Alternatives Program	-	-	\$14.64	\$14.84	\$14.84	\$14.84	\$14.84	\$415.23
State Planning & Research	-	-	\$11.27	\$11.01	\$12.01	\$12.01	\$12.01	\$335.54
August Redistribution	\$27.01	\$27.46	\$27.00	\$27.00	\$27.00	\$27.00	\$27.00	\$810.47
Total Federal Highway Revenues	\$639.24	\$599.02	\$597.08	\$634.34	\$634.34	\$634.34	\$634.34	\$18,962.63
FEDERAL DEDUCTIONS (REVENUE NOT AVAILABLE TO ADDRESS PLAN NEEDS)								
Total Federal Highway Revenue Takedowns (Metro Planning, State Planning & Research, Rail-Hwy Crossings, Rec Trails)	(\$20.43)	(\$18.86)	(\$19.07)	(\$19.99)	(\$19.99)	(\$19.99)	(\$19.99)	(\$598.02)
Total Federal Highway Revenues Available to Address Plan Needs (Current Dollars)	\$618.80	\$580.16	\$578.01	\$614.36	\$614.36	\$614.36	\$614.36	\$18,364.61
Total Federal Highway Revenues Available to Address Plan Needs (Constant 2011 Dollars)	\$618.80	\$568.78	\$555.56	\$578.92	\$514.07	\$421.71	\$345.95	\$13,970.59
STATE REVENUES								
Estimated State Revenues	2011	2012	2013	2014	2020	2030	2040	2011-2040
State Motor Fuel Revenues:	-	-	-	-	-	-	-	-
Gasoline Tax	\$328.03	\$330.72	\$329.66	\$328.01	\$318.29	\$302.73	\$287.93	\$9,292.28
Special Fuel Tax / Diesel	\$110.33	\$114.57	\$119.61	\$123.20	\$147.11	\$197.70	\$265.70	\$5,360.05
Non-Federal Aid Fund	\$18.00	\$18.00	\$18.00	\$18.00	\$18.00	\$18.00	\$18.00	\$540.00
Cross Island Parkway Toll Collections	\$6.99	\$7.52	\$8.00	\$8.32	\$10.53	\$0.00	\$0.00	\$110.56
Misc. (Interest, Permits, Fees, Match Projects, etc.)	\$33.95	\$33.39	\$53.06	\$36.00	\$36.33	\$36.87	\$37.43	\$1,111.59
Maintenance Trust Fund (Non-Fuel Component)	\$22.28	\$20.37	\$20.80	\$22.50	\$22.50	\$22.50	\$22.50	\$670.95
Maintenance Trust Fund Additional Vehicle Sales Tax (effective SFY 13-14)	\$0.00	\$0.00	\$41.00	\$42.44	\$52.16	\$73.58	\$103.79	\$1,897.92
General Fund Transfer for Port Access Road Project	\$0.00	\$10.08	\$0.00	\$56.74	\$0.00	\$0.00	\$0.00	\$172.36
General Fund Transfer for Transit	\$0.06	\$0.06	\$0.06	\$0.06	\$0.06	\$0.06	\$0.06	\$1.72
General Fund Transfer for SIB Bonding (effective SFY 13-14)	\$0.00	\$0.00	\$50.00	\$50.00	\$50.00	\$0.00	\$0.00	\$750.00
Additional General Funds / Surplus directed for specific uses	\$0.00	\$0.00	\$50.00	\$0.00	\$0.00	\$0.00	\$0.00	\$50.00
Total State Revenues	\$519.64	\$534.71	\$690.19	\$685.26	\$654.97	\$651.45	\$735.41	\$19,957.42
STATE DEDUCTIONS (REVENUE NOT AVAILABLE TO ADDRESS PLAN NEEDS)								
CTC Donor Bonus	(\$9.50)	(\$9.50)	(\$9.50)	(\$9.50)	(\$9.50)	(\$9.50)	(\$9.50)	(\$285.00)
General Fund Transfer for Transit	(\$0.06)	(\$0.06)	(\$0.06)	(\$0.06)	(\$0.06)	(\$0.06)	(\$0.06)	(\$1.72)
Deduct 1/4 of 1 cent of Gasoline dedicated to Transit	(\$6.38)	(\$6.38)	(\$6.34)	(\$6.31)	(\$6.12)	(\$5.82)	(\$5.54)	(\$178.87)
1 cent of Gasoline equivalent transfer to the SIB at -0.5% Growth	(\$25.50)	(\$25.50)	(\$25.37)	(\$25.25)	(\$24.50)	(\$23.30)	(\$22.16)	(\$715.49)
General Fund Transfer to SIB for Bonding (effective SFY 13-14)	\$0.00	\$0.00	(\$50.00)	(\$50.00)	(\$50.00)	\$0.00	\$0.00	(\$750.00)
IFTA Return of Revenue (estimated at 3% Growth)	(\$14.00)	(\$14.50)	(\$16.20)	(\$16.69)	(\$19.92)	(\$26.78)	(\$35.98)	(\$723.98)
Debt Service for Cross Island Parkway & School Bus Bonds	(\$3.62)	(\$3.69)	(\$3.66)	(\$3.62)	(\$3.27)	\$0.00	\$0.00	(\$41.65)
Debt Service for MPO/COG & Interstate Bonded Programs	(\$56.04)	(\$53.80)	(\$53.34)	(\$52.70)	(\$36.01)	\$0.00	\$0.00	(\$563.79)
SIB Project Loans	(\$30.58)	(\$30.58)	(\$30.58)	(\$30.58)	(\$22.98)	(\$4.98)	\$0.00	(\$456.36)
Personnel Costs	(\$181.61)	(\$174.06)	(\$174.92)	(\$176.72)	(\$169.82)	(\$188.37)	(\$209.09)	(\$5,547.11)
Employer Contributions	(\$70.01)	(\$69.93)	(\$69.70)	(\$71.44)	(\$74.57)	(\$95.45)	(\$122.19)	(\$2,677.01)
Cross Island Parkway Operating Costs	(\$3.49)	(\$2.97)	(\$3.83)	(\$3.69)	(\$5.24)	\$0.00	\$0.00	(\$52.73)
Facility Improvements & Non-Maintenance Operating Costs	(\$10.33)	(\$14.90)	(\$14.98)	(\$11.48)	(\$16.48)	(\$19.66)	(\$23.93)	(\$541.24)
Total State Revenue Takedowns	(\$411.09)	(\$405.86)	(\$458.47)	(\$458.04)	(\$438.47)	(\$373.92)	(\$428.45)	(\$12,534.94)
Total Available State Highway Revenues (Current Dollars)	\$108.55	\$128.84	\$231.71	\$227.22	\$216.50	\$277.52	\$306.96	\$7,422.48
Total Available State Highway Revenues (Constant 2011 Dollars)	\$108.55	\$126.32	\$222.72	\$214.12	\$181.16	\$190.50	\$172.85	\$5,481.00
TOTAL AVAILABLE FEDERAL & STATE HIGHWAY REVENUES								
Total Federal Highway Revenues	\$639.24	\$599.02	\$597.08	\$634.34	\$634.34	\$634.34	\$634.34	\$18,962.63
Total Federal Highway Revenue Deductions	(\$20.43)	(\$18.86)	(\$19.07)	(\$19.99)	(\$19.99)	(\$19.99)	(\$19.99)	(\$598.02)
Total State Revenues	\$519.64	\$534.71	\$690.19	\$685.26	\$654.97	\$651.45	\$735.41	\$19,957.42
Total State Revenue Deductions	(\$411.09)	(\$405.86)	(\$458.47)	(\$458.04)	(\$438.47)	(\$373.92)	(\$428.45)	(\$12,534.94)
Total Available Revenues (Current Dollars)	\$727.35	\$709.00	\$809.72	\$841.58	\$830.86	\$891.88	\$921.31	\$25,787.08
Total Available Revenues (Constant 2011 Dollars)	\$727.35	\$695.10	\$778.28	\$793.04	\$695.23	\$612.21	\$518.80	\$19,451.59
ADDITIONAL LIKELY STATE-SYSTEM INVESTMENT NOT UNDER DOT CONTROL								
25% of 2.66 cents in CTC Funds	\$16.96	\$16.96	\$16.87	\$16.79	\$16.29	\$15.49	\$14.74	\$475.80
Additional CTC funds likely to be invested	\$22.91	\$19.41	\$21.16	\$21.16	\$21.16	\$21.16	\$21.16	\$634.76
State Infrastructure Bank (SIB) "Normal Program"	\$25.15	\$29.30	\$11.02	\$107.40	\$95.10	\$25.00	\$25.00	\$1,786.17
State Infrastructure Bank (SIB) "Special DOT Bonding Program"	\$0.00	\$0.00	\$10.00	\$40.00	\$0.00	\$0.00	\$0.00	\$600.00
Special Purpose Local Option Sales Taxes (SPLOST)	\$119.90	\$153.87	\$197.57	\$261.01	\$175.00	\$175.00	\$175.00	\$5,517.07
Total Available Revenues (Current Dollars)	\$184.91	\$219.54	\$256.63	\$446.36	\$307.55	\$236.65	\$235.90	\$9,013.81
Total Available Revenues (Constant 2011 Dollars)	\$184.91	\$215.24	\$246.66	\$420.61	\$257.34	\$162.45	\$132.84	\$7,125.65
GRAND TOTAL: FEDERAL + STATE + ADDITIONAL LIKELY STATE-SYSTEM INVESTMENT NOT UNDER DOT CONTROL								
Total Available Revenues (Current Dollars)	\$912.26	\$928.54	\$1,066.35	\$1,287.94	\$1,138.41	\$1,128.53	\$1,157.21	\$34,800.89
Total Available Revenues (Constant 2011 Dollars)	\$912.26	\$910.33	\$1,024.94	\$1,213.65	\$952.57	\$774.66	\$651.64	\$26,577.25

Source: FHWA data, SCDOT data, and calculations using these sources.



3 TRANSIT BASELINE REVENUE FORECAST

The following summarizes the baseline projection of Federal and state transit revenues for South Carolina from FY 2011 to FY 2040. These revenues comprise approximately 4 percent of the \$27.63 billion expected to be available to address modal needs during the 29-year planning horizon.

Transit services in South Carolina are funded by:

- Annual apportionments from the Federal Transit Administration (FTA);
- ¼ of 1 cent of the motor fuel user fee paid by South Carolina motorists; and
- An annual South Carolina general fund appropriation of \$57,270.

This work does not consider additional revenues outside of SCDOT purview, such as local revenues provided for transit.

The following sections explain the transit revenue baseline forecast methodology and findings by revenue source.

3.1 Federal Transit Revenues

As with Federal Highway revenues, FTA apportionments to South Carolina were provided from Federal FY 2006 to FY 2012 through SAFETEA-LU, including continuing resolutions. Apportionments were provided through MAP-21 in FY 2013 and FY 2014. MAP-21 brought new emphasis on repairing and replacing aging transportation infrastructure by establishing a new needs-based formula program and new asset management requirements. The new law consolidated several SAFETEA-LU programs; “Fact Sheets” for each of the FTA programs in MAP-21 can be found on the web at: <http://fta.dot.gov/map21/>.

Table 3-1 identifies the FTA apportionments provided to South Carolina from 2006 to 2012 (via SAFETEA-LU) in nominal dollars. The apportionment ranged from \$34.8 million to \$44.1 million per year over the SAFETEA-LU time period (\$44.1 million was a high in FY 2011). The average annual growth rate in apportionments to South Carolina during this time was over 2 percent. As shown, the majority of FTA revenues are provided for transit services in South Carolina’s urban areas.

The baseline forecast of transit revenues for South Carolina from FY 2011 to FY 2040 is summarized in **Table 3-2** in nominal and real dollars. Federal revenues are shown within MAP-21 program categories. Metropolitan Planning apportionments, Statewide Planning apportionments, Rural Transit Assistance Program (RTAP) apportionments, and apportionments for Catawba Nation are not included in this work because they are either not used for operating and capital costs by SCDOT or are not administered by SCDOT. As shown, in the categories considered, apportionments totaling \$36.5

**Table 3-1: Federal Transit Revenue History
(In Millions of Nominal Dollars)**

Federal Transit Revenues	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012
Urbanized Areas (Section 5307 and 5340)	\$15.37	\$16.13	\$18.09	\$19.16	\$18.49	\$18.94	\$19.34
Fixed Guideway Modernization	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Nonurbanized Areas (Section 5311 and 5340)	\$9.19	\$9.72	\$10.52	\$11.11	\$11.12	\$11.15	\$11.17
RTAP	\$0.14	\$0.16	\$0.17	\$0.17	\$0.18	\$0.18	\$0.18
Formula JARC	\$1.87	\$1.97	\$2.14	\$2.51	\$2.40	\$2.40	\$2.42
Special Need for Elderly and Disabled	\$1.68	\$1.77	\$1.92	\$2.06	\$2.03	\$2.02	\$2.03
New Freedom	\$1.08	\$1.20	\$1.30	\$1.50	\$1.47	\$1.48	\$1.49
Bus and Bus Facility Program	\$4.08	\$2.62	\$3.58	\$4.44	\$7.16	\$2.22	\$1.83
New Starts	\$0.39	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Clean Fuels	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Alternative Analysis	\$0.30	\$0.30	\$0.00	\$0.00	\$0.00	\$0.36	\$0.00
Metropolitan Planning Section 5303	\$0.57	\$0.60	\$0.64	\$0.68	\$0.68	\$0.68	\$0.68
State Planning Section 5304	\$0.15	\$0.16	\$0.17	\$0.19	\$0.18	\$0.18	\$0.18
Research	\$0.00	\$0.16	\$0.68	\$0.00	\$0.00	\$0.00	\$0.00
Over-the-road Bus	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.03	\$0.00
Tribal Transit	\$0.00	\$0.00	\$0.00	\$0.00	\$0.06	\$0.39	\$0.35
Tiger II	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$4.12	\$0.00
Total	\$34.81	\$34.79	\$39.20	\$41.82	\$43.76	\$44.13	\$39.67

Source: http://www.fta.dot.gov/12853_88.html

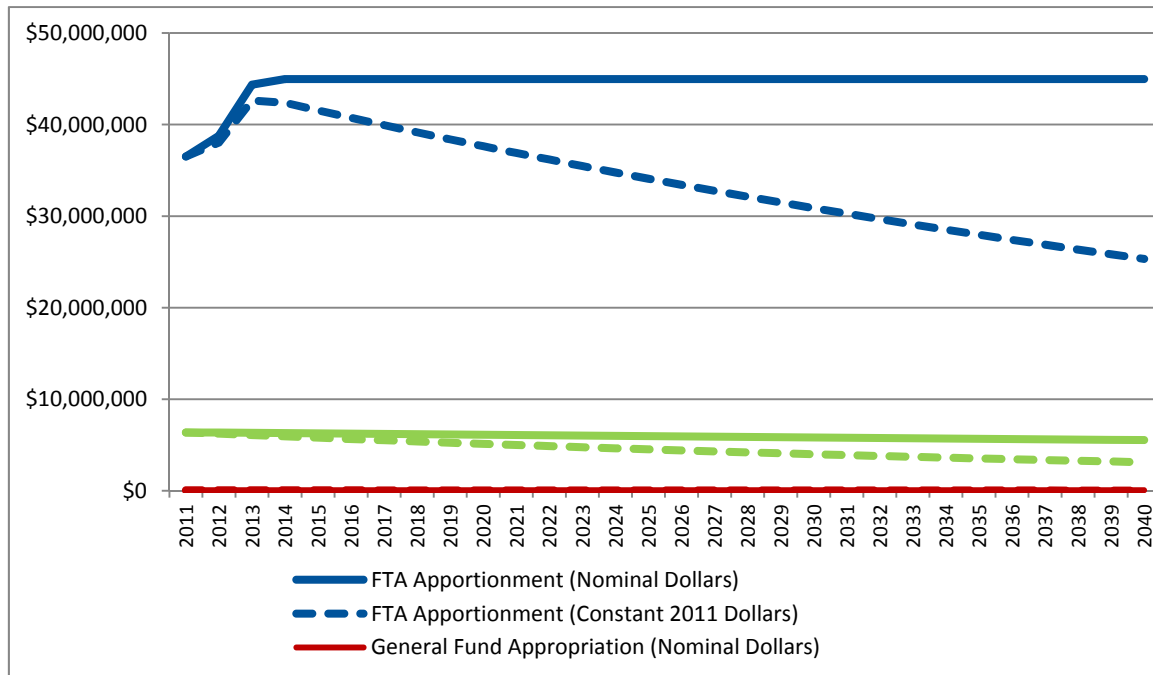
**Table 3-2: Transit Baseline Revenue Forecast, FY 2011-2040
(Nominal vs. Real Dollars, Millions)**

NOMINAL DOLLARS								
Federal Transit Revenues (MAP21 Categories)	2011	2012	2013	2014	2020	2030	2040	2011-2040
Section 5307 and Section 5340 (Urbanized Area Formula Grants) Apportionment	-	-	\$24.34	\$24.68	\$24.68	\$24.68	\$24.68	\$690.75
Section 5310 Enhanced Mobility of Seniors & Individuals with Disabilities Apportionment	-	-	\$3.63	\$3.68	\$3.68	\$3.68	\$3.68	\$103.02
Section 5311 (Rural Area Formula Grants) and 5340 Apportionment	-	-	\$12.38	\$12.55	\$12.55	\$12.55	\$12.55	\$351.27
Appalachian Development Public Transportation Assistance Program	-	-	\$0.20	\$0.20	\$0.20	\$0.20	\$0.20	\$5.66
Section 5339 (Bus and Bus Facilities Program) Apportionment	-	-	\$3.80	\$3.86	\$3.86	\$3.86	\$3.86	\$107.90
Estimated Apportionment Total	\$36.51	\$38.78	\$44.35	\$44.97	\$44.97	\$44.97	\$44.97	\$1,333.90
State Transit Revenues								
General Fund Transfer for Transit	\$0.06	\$0.06	\$0.06	\$0.06	\$0.06	\$0.06	\$0.06	\$1.72
Motor Fuel User Fee	\$6.38	\$6.38	\$6.34	\$6.31	\$6.12	\$5.82	\$5.54	\$178.87
Deductions ("Takedowns") - SCDOT Costs								
Personnel Costs	(\$1.13)	(\$1.44)	(\$1.22)	(\$1.30)	(\$1.93)	(\$3.72)	(\$7.21)	(\$97.55)
Employer Contributions	\$0.00	\$0.00	(\$0.50)	(\$0.53)	(\$0.70)	(\$1.15)	(\$1.87)	(\$29.20)
Internal Operating costs	(\$0.62)	(\$0.32)	(\$0.60)	(\$0.63)	(\$0.61)	(\$0.58)	(\$0.55)	(\$17.52)
Total Transit side Takedowns	(\$1.75)	(\$1.75)	(\$2.32)	(\$2.46)	(\$3.24)	(\$5.44)	(\$9.63)	(\$144.27)
Total Available Transit Revenue (Current Dollars)	\$41.19	\$43.46	\$48.43	\$48.88	\$47.91	\$45.41	\$40.94	\$1,370.22
CONSTANT 2011 (REAL) DOLLARS								
Federal Transit Revenues (MAP21 Categories)	2011	2012	2013	2014	2020	2030	2040	2011-2040
Section 5307 and Section 5340 (Urbanized Area Formula Grants) Apportionment	-	-	\$23.39	\$23.26	\$20.65	\$16.94	\$13.90	\$514.63
Section 5310 Enhanced Mobility of Seniors & Individuals with Disabilities Apportionment	-	-	\$3.49	\$3.47	\$3.08	\$2.53	\$2.07	\$76.75
Section 5311 (Rural Area Formula Grants) and 5340 Apportionment	-	-	\$11.90	\$11.83	\$10.50	\$8.62	\$7.07	\$261.71
Appalachian Development Public Transportation Assistance Program	-	-	\$0.19	\$0.19	\$0.17	\$0.14	\$0.11	\$4.22
Section 5339 (Bus and Bus Facilities Program) Apportionment	-	-	\$3.65	\$3.63	\$3.23	\$2.65	\$2.17	\$80.39
Estimated Apportionment Total	\$36.51	\$38.02	\$42.63	\$42.38	\$37.63	\$30.87	\$25.32	\$1,012.24
State Transit Revenues								
General Fund Transfer for Transit	\$0.06	\$0.06	\$0.06	\$0.05	\$0.05	\$0.04	\$0.03	\$1.31
Motor Fuel User Fee	\$6.38	\$6.25	\$6.10	\$5.95	\$5.12	\$4.00	\$3.12	\$137.21
Deductions ("Takedowns") - SCDOT Costs								
Personnel Costs	(\$1.13)	(\$1.41)	(\$1.18)	(\$1.23)	(\$1.61)	(\$2.55)	(\$4.06)	(\$67.73)
Employer Contributions	\$0.00	\$0.00	(\$0.48)	(\$0.49)	(\$0.59)	(\$0.79)	(\$1.05)	(\$20.45)
Internal Operating costs	(\$0.62)	(\$0.31)	(\$0.58)	(\$0.59)	(\$0.51)	(\$0.40)	(\$0.31)	(\$13.36)
Total Transit side Takedowns	(\$1.75)	(\$1.72)	(\$2.23)	(\$2.32)	(\$2.71)	(\$3.74)	(\$5.42)	(\$101.54)
Total Available Transit Revenue (Constant 2011 Dollars)	\$41.19	\$42.61	\$46.54	\$46.06	\$40.09	\$31.17	\$23.05	\$1,049.22

Source: FTA data, SCDOT data, and calculations using these sources.

million, \$38.8 million, \$44.3 million, and \$45.0 million (nominal dollars) were provided to South Carolina in FY 2011, 2012, 2013, and 2014, respectively. Given the bleak outlook for the highway trust fund, the primary source of Federal transit revenues, SCDOT assumed flat average annual growth from FY 2014 to FY 2040, resulting in approximately \$1.3 billion (nominal dollars) in Federal transit revenues expected over the life of the plan. Considering assumed average annual inflation of 2 percent during this time, this translates to \$1.0 billion in constant 2011 (real) dollars. **Figure 3-1** illustrates the expected growth in Federal and state transit revenues and the impact of inflation over time.

**Figure 3-1: Transit Baseline Revenue Forecast, FY 2011-2040
(Nominal Dollars vs. Real Dollars)**



Source: FTA data, SCDOT data, and calculations using these sources.

FTA revenues provided for capital expenditures require a 20 percent non-Federal match. Section 5307, 5310, and 5311 funds may be used for operating expenses at a higher non-Federal match (50 percent instead of 20 percent). Transit agencies are constantly challenged to provide adequate operating cash and the additional match requirement to obtain Federal operating assistance is burdensome.

3.2 State Transit Revenues

One fourth of 1 cent of the state motor fuel user fee (currently 16.75 cents per gallon) is dedicated for transit in South Carolina. The State provides these dedicated funds to providers to match Federal funds that support eligible capital and operations expenses. On average, state motor fuel revenues have increased by 0.7 percent annually over the past 5 years. But, these revenues are expected to decline on average 0.5 percent per year over the life of the long range plan. In state FY 2011, \$6.4 million in motor fuel user fee revenues was provided for transit (which included carry-forward from the previous fiscal year), but this is expected to decline to approximately \$5.5 million in 2040, resulting in \$178.9

million expected over the life of the plan (nominal dollars). Converted to current 2011 (real) dollars, considering assumed 2 percent average annual inflation, this would yield \$137.2 million. Ninety percent of state motor fuel revenues dedicated for transit are used to match Federal funds. The remaining ten percent is used to support public transit projects that are not otherwise eligible for Federal funds.

The Mass Transit office was housed in the South Carolina Governor's Office until 1982 where it was funded with \$1.3 million in annual general fund appropriations. Today, the annual general fund appropriation is \$57,270. The forecast includes this transfer over the life of the plan, totaling \$1.7 million (nominal dollars) or \$1.3 million in constant 2011 (real) dollars considering assumed 2 percent annual inflation.

SCDOT's projections for operations expenditures were deducted from the baseline revenue forecast to produce an estimate of state capital investments only. While revenues are flat or declining, SCDOT's costs are increasing. Deductions, shown in **Table 3-3**, total \$144.3 million in nominal dollars (or \$101.5 million in constant 2011 dollars) over the life of the long range plan.

3.3 Transit Baseline Summary

For comparison, the 2008 MTP estimated \$2.1 billion in anticipated funding through 2030 (a \$1.8 billion shortfall compared to the needs estimated in that plan). Given the national economic difficulties since that time, it is not surprising that the current revenue forecast is significantly less than the 2008 estimate.



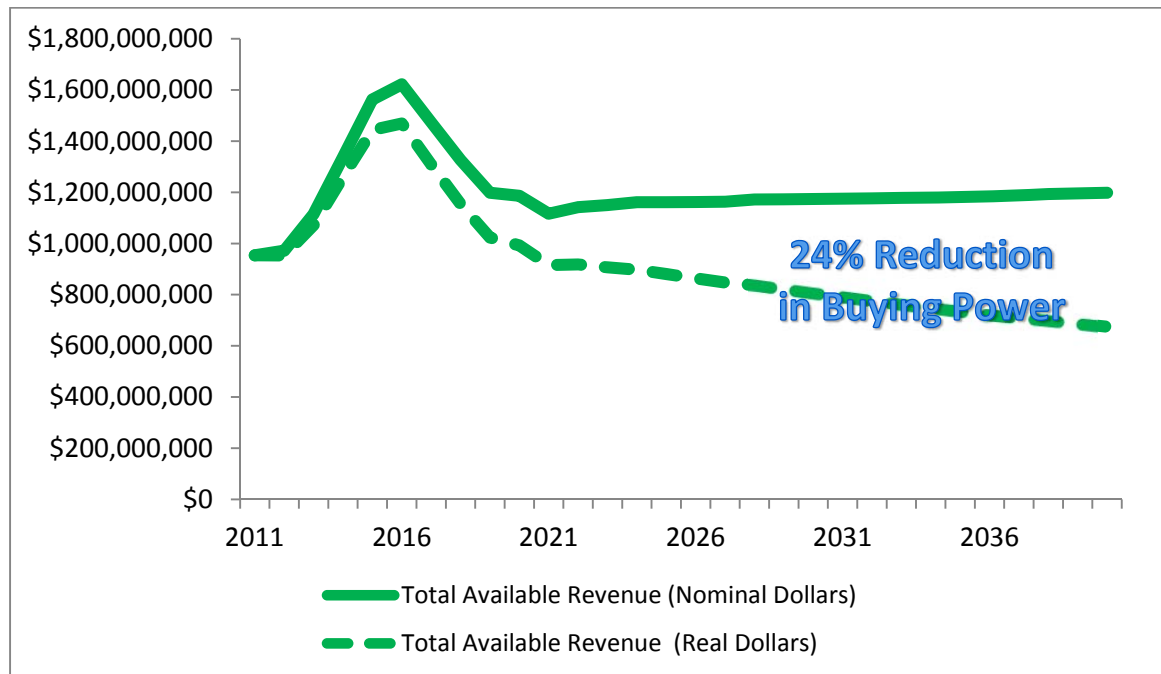
4 SUMMARY

In summary, over the 29-year planning horizon, \$27.63 billion is expected to be available for highway and transit improvements. The composition of this total was identified in Table 1-1.

On average, \$920.9 million will be available per year from FY 2011 to FY 2040.

The \$27.63 billion revenue forecast total in 2011 dollars is equivalent to \$36.2 billion in nominal dollars (not adjusted for inflation). (Figure 4-1) In other words, buying power is expected to be reduced 24 percent over the life of the plan.

**Figure 4-1: Baseline Revenue Forecast, FY 2011-2040
(Nominal Dollars vs. Real Dollars)**



Source: FHWA data, FTA data, SCDOT data, and calculations using these sources.



5 ALTERNATIVE REVENUE SCENARIOS

An assessment of three additional revenue scenarios was also made as part of this work. It is judicious to consider a range of possible outcomes when planning for South Carolina's future. The following three "alternative revenue futures" were developed for planning purposes only. This sensitivity analysis provides an indication of the magnitude of revenue increase or decrease that could be expected from some plausible potential scenarios.

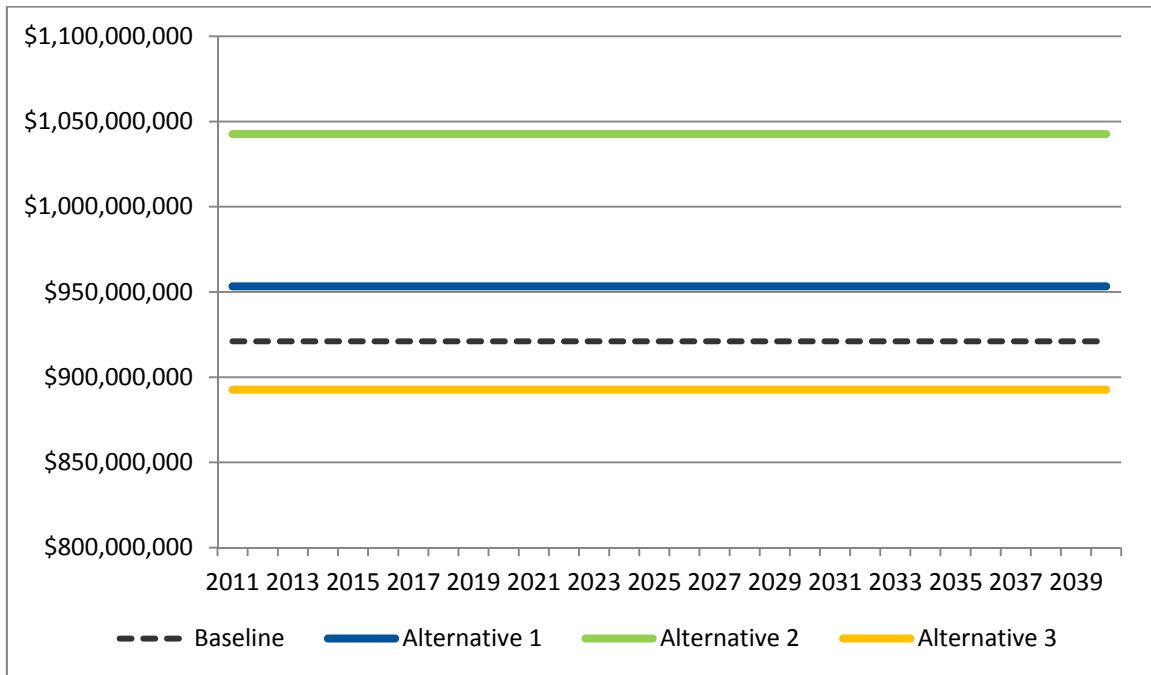
Alternative Revenue Future 1: If the gasoline portion of the state motor fuel tax increased 1.5 percent per year on average from 2020 to 2040, instead of declining 0.5 percent per year, as assumed in the baseline revenue forecast, the revenue baseline forecast would increase from \$27.63 billion to \$28.6 billion (real dollars), a 3.5 percent rise. A 1.5 percent increase in state gasoline tax revenues was modeled because there have been some recent discussions about indexing state motor fuel revenues to CPI, capped at 1.5 percent per year. This paper in no way advocates for this or any particular revenue enhancement mechanism.

Alternative Revenue Future 2: If Federal highway and Federal transit revenues were to grow in the future (2015 to 2040) at 2 percent annually on average, in line with historic Federal revenue growth, the revenue baseline forecast would increase from \$27.63 billion to \$31.28 billion (real dollars), a 13.2 percent increase. This type of growth does not appear realistic under the current funding mechanism, given the expected decline in motor fuel revenues due largely to increasing vehicle efficiency.

Alternative Revenue Future 3: The US Energy Information Administration (EIA) estimates that, even with VMT increasing, from 2011 to 2040 the "million barrels per day oil equivalent" will decline/increase on average nationally at negative 0.7 percent annually for "light duty vehicles" and positive 1.3 percent annually for "freight trucks." A planning level assessment was made of the implications of this trend on the baseline revenue forecast; assuming 67 percent of Federal and state motor fuel revenues are generated from gasoline taxes and 33 percent of motor fuel revenues are generated from diesel taxes, and that these sources decline/increase at -0.7 percent and 1.3 percent, respectively. The impact to the revenue baseline forecast would be a 3.1 percent decrease, reducing the total revenue from \$27.63 billion to \$26.78 billion (real dollars).

Figure 5-1 illustrates the average annual revenue level for the baseline and scenario forecasts.

Figure 5-1: Average Annual Revenue Level for Baseline Revenue Forecast and Alternative Revenue Scenarios, FY 2011-2040 (Real Dollars)



Source: FHWA data, SCDOT data, and calculations using these sources.



6 FUNDING GAP

South Carolina faces a tremendous challenge to meet ever increasing transportation needs, a common problem facing states across the country. Twenty-nine-year modal needs, estimated as part of the ongoing MTP, total \$70.45 billion for highway, bridge, bicycle, mass transit and premium transit. As shown in **Figure 6-1**, compared with \$27.63 billion in baseline revenues, SCDOT is facing a \$42.8 billion funding gap to 2040. This equates to a \$1.4 billion average annual funding gap over the 29-year planning horizon, compared to the average annual funding gap of \$1.5 billion that was estimated as part of the last 20-year plan (2030 MTP).

Figure 6-1: Funding Gap, FY 2011-2040

