

Chapter 10

Financial Plan

Introduction

Federal regulations require a financial plan as an MPO Long Range Plan element. The purpose is to demonstrate that proposed investments are reasonable in the context of reasonably anticipated future revenues over the life of the plan and for future network years (2009, 2010, 2012, 2015, 2025, and 2035). Meeting this test is called “fiscal constraint.”

The 2035 Long Range Transportation Plan is fiscally constrained based on analysis of revenues and costs. The transportation investments proposed to meet metropolitan transportation needs over the planning period are consistent with revenue forecasts. The Financial Plan details both proposed investments and revenue forecasts over the life of the plan.

Financial Plan Analysis

The proposed investments were developed by Greensboro Urban Area MPO staff in cooperation with staff at NCDOT, the Greensboro Transit Authority (GTA), and the Piedmont Authority for Regional Transportation (PART). These investments include roadway, rail, transit, bicycle, and pedestrian facilities and services for the life of this plan. They include existing and committed projects reflected in the Transportation Improvement Program (TIP) and the City Capital Improvement Programs, and the future plans of the MPO, NCDOT, the City of Greensboro, GTA, and PART. They also reflect needs analysis conducted under the Congestion Management Process, staff review, and public involvement. Roadway maintenance and transit operation and maintenance costs were also forecasted.

This chapter provides an overview of the forecasted cost and revenue assumptions, along with the detailed research results used to derive these values. The following sections provide more detailed assumptions regarding revenue, capital costs, maintenance costs, and future revenue needs.

Revenue Assumptions

Revenue forecasts were developed after a review of previous state and local expenditures, current funding trends, and likely future funding levels. The revenue forecasts involved consultation with NCDOT, GTA, and PART. All dollar figures discussed in this section were analyzed in current-year dollars. Figures are presented in constant dollars so that they will be fully comparable through time against a constant baseline value (the current-year dollar). Figures are also provided in year-of-expenditure dollars for all revenues in Appendix D.

Year-of-expenditure dollars are inflation rates applied to the revenues based on NCDOT’s rate reflected in the TIP. NCDOT used a 5% rate of increase per year for TIP projects. The MPO analysis on average reflected a 1% growth in revenues from 2009 through 2035 for all categories except state maintenance. For state maintenance, the MPO analysis reflected a 5% rate of growth. The 1% and 5% rates of increase represent general growth over time. However, the rates do not account for revenue adjustments required to reflect the amount of money needed to construct a project in the future. In the last three to five years the cost of raw materials needed for transportation projects has increased substantially. Therefore, an adjustment must be made to the revenues; this was done with the year-of-expenditure rate of 5%. This methodology does assume that revenues at the federal, state, and local levels continue to grow over time. The calculation applies the rate for the horizon year assuming the worst-case scenario.

Figure 10a shows the forecasted revenues for the Greensboro Urban Area 2035 LRTP. The figure represents revenues for highway, transit, and maintenance in current-year dollars.

Greensboro Urban Area 2035 Long Range Transportation Plan

Figure 10a — 2035 LRTP Revenue Forecasts

2035 LRTP Revenue Forecast								
(In Thousands of Dollars)								
Period	Federal and State Revenues (TIP)		State	Local Revenues				Totals
	Highway	Transit	Maintenance	GTA	PART	Powell Bill	Bonds	
2009	96,310	36,440	38,600	24,300	8,960	15,990	9,900	230,500
2010	61,270	9,120	20,760	12,780	3,860	8,000	0	115,790
2011-2012	91,730	36,050	44,680	26,420	7,760	15,990	0	222,630
2013-2015	283,610	30,750	75,750	41,690	11,520	23,990	178,160	645,470
2016-2025	993,170	110,590	349,880	155,210	41,650	79,970	164,240	1,894,710
2026-2035	782,850	159,240	569,920	171,630	45,870	79,970	136,500	1,945,980
Totals	2,308,940	382,190	1,099,590	432,030	119,620	223,910	488,800	5,055,080

Highway Federal and State Revenues (TIP)

The federal and state revenue forecasts were developed based on past, current, and expected future funding levels reflected in NCDOT's Draft 2009-2015 TIP. A key assumption is the expected modest growth of federal and state revenue for roadway projects in the Greensboro area. Highway, rail, safety, bridges, resurfacing, and enhancement projects listed in the TIP were considered.

The specific assumptions for each horizon year are as follows:

- 2009: Revenues are equivalent to the cost of funded projects listed for 2008 and 2009 in the 2009-2015 TIP.
- 2010, 2011-2012, and 2013-2015: Revenues are based on average annual costs of projects reflected in the 2009-2015 TIP.
- 2016-2025: Revenues are based on the average annual amounts reflected in the previous TIP, which covered 2007-2013, and the current 2009-2015 TIP. The cost trends reflected in both TIPs are assumed to continue for this period with no annual growth. State revenue sources are assumed to grow at 2.5% annually.
- 2026-2035: Federal revenues are assumed to increase by 21% in 2026 based on project needs, and a 2% annual growth rate is assumed throughout the remainder of the period. However, state revenues are assumed to decrease by 30% in 2026 as a result of a majority of the intrastate and urban loop

projects being completed. A 1.16% increase is assumed throughout the remainder of the period.

Transit Federal and State Revenues (TIP)

In collaboration with GTA and PART, the MPO developed revenue forecasts for federal and state transit funding. The values shown in Figure 10a include these revenue forecasts. Revenue forecasts for GTA are also based on the Mobility Greensboro Public Transportation Master Plan adopted in 2004, which identifies short- and long-term improvements.

Current and previous transit funding levels were studied to develop assumptions for the future. Federal and state funding were analyzed individually for GTA and PART. The analysis for each is discussed in detail below.

For GTA, revenue assumptions include the following:

- Federal sources
 - Section 5307 Urbanized Area formula program funding is assumed to grow at 3% per year. This rate of growth will require increased federal investment in transit, but is less than the average growth rate projected in federal law.
 - STP-DA funding, which is at the MPO's discretion (see the next section), is applied as follows:
 - 2008 through 2011, and 2021 through 2025: none assumed
 - 2012 through 2020: \$2.0 million per

- Assume college and university partners contribute \$300,000 per year towards the HEAT (Higher Education Area Transit) system beginning in 2010. In 2008 and 2009, they provide the local match for CMAQ grants.
- Assume Duke Power's required payment to GTA continues as stated in its contract at \$1.5 million per year through 2027, when it ends.
- Assume miscellaneous other local income remains constant at \$215,000 per year.

The implementation of a local sales tax for transit is not assumed. Mobility Greensboro calculated that a half-penny sales tax could generate \$6.9 million per year. In addition, the MPO did not assume that any local transportation bonds were used to fund transit services or capital purchases. Consideration should seriously be given to these funding options if costs are higher than projected or if the community desires more aggressive transit service expansions than outlined here. A local sales tax for transit would result in a substantial amount of yearly revenue; a transportation bond would result in a one-time infusion of funds.

For PART, revenue assumptions include the following:

- Assume local tax revenue from rental car taxes starts at \$3.6 million per year with 1% yearly growth.
- Assume Intercity Bus funding continues and grows at the same rate as maintenance and operations costs (4.5%). Because it pays for specific services that would likely be discontinued without this funding, this is a reasonable assumption.

The assumptions do not include the implementation of a vehicle registration fee or a local sales tax for transit. PART already collects a vehicle registration fee in one of its member counties. The LRTP does not reflect this revenue source, because it is relatively small at this time. However, if all member counties imposed vehicle registration fees of \$1 to \$5, this revenue source could provide \$1.4 million to \$7 million per year. A local sales tax for transit is an additional funding option that could be pursued. Although the projections in this plan do not indicate the need for these funding options at this time, it is possible that they will be required either for

additional expansion of regional bus services or for implementation of a potential regional rapid transit system.

Powell Bill Funds

Powell Bill funds are drawn from state gasoline tax revenues. NCDOT returns these funds to eligible cities and towns for maintaining, repairing, constructing, reconstructing, or widening municipal streets. Powell Bill funds are also eligible for the construction and maintenance of sidewalks and bikeways located within the rights-of-way of public streets and highways.

The City of Greensboro is the sole recipient of Powell Bill funds in the MPO area. In the past, Greensboro used these funds extensively to build a capital reserve for construction of local street system improvements and sidewalk projects throughout the City. In light of fiscal pressures since the 2001 economic downturn, the City has shifted this allocation primarily to roadway maintenance activities and secondarily to the municipal street resurfacing program. This reduces pressure on the general fund but also reduces the City's ability to respond to area transportation construction needs. Although some consideration has been given to the potential over the long term to redirect some amount of Powell Bill resources to construction activities, this plan makes the conservative assumption that that will not be the case.

The amount of these funds distributed to a municipality is based on the number of street-miles maintained and the City's population. The Powell Bill funding for the planning area was reviewed for the years 2000-2007. The amounts for each of these years were converted to 2008 dollars, which showed a trend of stagnant funding levels. A conservative no-growth assumption was applied to forecast the Powell Bill funding through 2035 based on the average annual funding level between 2000 and 2007. This flat trend reflects an increase in City-maintained lane-mileage and stagnation in state gas tax revenues.

Bond Funds

The City of Greensboro has approved bond programs for transportation investments regularly since the early decades of the last century. The current Transportation

Bond program provides \$74 million between 2002 and 2010 and was approved by City voters in November 2000. A little more than \$63 million of this is allocated between 2004 and 2009, to be spent on roadway system enhancements, public transportation, pedestrian and bicycle facilities, and roadway and sidewalk maintenance. A bond referendum is being proposed in 2008 for transportation projects for approximately \$174 million. MPO analysis assumes future bonds will be proposed and approved to meet future demands for some transportation projects. The local revenue forecast assumes enough funding to meet current and future project costs.

Cost Assumptions

Cost forecasts were developed after a review of previous state and local expenditures, current trends, and likely future needs. The cost forecasts involved consultation with NCDOT, GTA, and PART. All dollar figures discussed in this section were analyzed in current-year dollars. Figures are presented in constant dollars so that they will be fully comparable through time against a constant baseline value (the current-year dollar). Figures are also provided in year-of-expenditure dollars for all costs in Appendix D.

Year-of-expenditure dollars are inflation rates applied to the costs based on NCDOT's rate reflected in the TIP. NCDOT used a 5% rate of increase per year for TIP projects. The MPO analysis on average reflected a 1% increase from 2009 through 2035 for all costs except state maintenance. For state maintenance, the MPO analysis reflected a 5% rate of increase. The 1% and 5% rates of increase represent general growth over time. However, the rates do not account for revenue adjustments required to reflect the amount of money needed to construct a project. In the last three to five years the cost of raw materials needed for transportation projects has increased substantially. Therefore, an adjustment must be made to the costs; this was done with the year-of-expenditure rate of 5%. This methodology does assume that the recent cost increases for raw materials continue throughout the period of the plan. The calculation applies the rate for the horizon year assuming the worst-case scenario. For example, all projects shown in years 2013 through 2015 are assumed to be constructed by 2015; therefore, the year-of-expenditure rate was applied in 2015. Although

it is assumed that construction will begin before 2015, the calculation assumes a higher cost.

Costs were developed for capital, operations, and maintenance. Capital costs are separated into roadway, transit, and non-motorized (bicycle and pedestrian) modes. The costs for each are summarized in Figure 10b.

Greensboro Urban Area 2035 Long Range Transportation Plan

Figure 10b – 2035 LRTP Cost Forecasts

2035 LRTP Costs Forecast							
(In Thousands of Dollars)							
Period	Capital			Operating & Maintenance			Totals
	Highway	Transit	Non-Motorized	State Roads	Local Roads	Transit	
2009	100,370	31,340	5,600	38,600	15,990	38,360	230,260
2010	61,270	7,780	1,630	20,760	8,000	17,970	117,410
2011-2012	91,640	31,160	0	44,680	15,990	39,070	222,540
2013-2015	461,770	22,060	58,360	75,750	23,990	60,830	702,760
2016-2025	1,139,310	43,930	48,040	349,880	79,970	238,320	1,899,450
2026-2035	909,520	54,260	42,230	569,920	79,970	307,690	1,963,590
Totals	2,763,880	190,530	155,860	1,099,590	223,910	702,240	5,136,010

Roadway Capital Costs

The continued growth of population, employment, and vehicle miles of travel in the MPO area will increase the demand for additional roadway facilities. Roadway capital projects were developed and assigned to horizon years based on the current investment assumptions included in the Draft 2009-2015 TIP, various technical analyses conducted during plan development, a review of public input, and consultation with MPO agencies including NCDOT. Projects listed in the TIP were assigned the costs shown in the document. Costs for those projects not included in the TIP were estimated using the 2007 cost-estimation spreadsheet provided by NCDOT or were based on recent project studies. Figures are presented in constant dollars so that they will be fully comparable through time against a constant baseline value (the current-year dollar). Figures are also provided in year-of-expenditure dollars for all revenues in Appendix D.

Year-of-expenditure dollars are additional inflation rates applied to the revenues based on NCDOT's rate reflected in the TIP. NCDOT used a 5% rate of increase per year for projects reflected in the 2009-2015 TIP. Therefore, a 5% rate of increase was applied to all projects.

All roadway investments were assigned to a network year based on current status, expected project development timelines, and relative need. Figures 10c through 10h list roadway projects by the horizon year in which their construction is projected to be complete. Maps 4-4 through 4-8 in Chapter 4 display the location of projects for each horizon year.

Figure 10c - 2009 Project Costs

2009												
Map ID	Project ID	Funding	TIP or Bond ID	Facility	Description / Extents	Length (miles)	Existing # Lanes	Horizon Year # Lanes	BiPed	Regionally Significant?	CMAQ	PROJECT COSTS
	T003	Federal	R-2309	US 220	Horse pen Creek Rd. to US 220-NC 68 Connector (R-2413) (see Map ID D1) <i>Mitigation & Right-of-way Only</i>	6.3	2 lane	2 lane	Yes	Yes		9,059,000
	T004	Federal	U-2412 B	High Point Road	Vickrey Chapel Rd. to Hilltop Rd. (see Map ID D2) <i>Right-of-way Only</i>	3.8 / 7.8	3 lane	3 lane	Yes	Yes		10,600,000
	T005	Federal	R-261 I	West Market St.	NC 68 to Bunker Hill Rd. in Colfax (see Map ID D3) <i>Right-of-way & Utility Only</i>	3.6	2 lane	2 lane	Yes	Yes		9,650,000
	T006	Federal	U-4006	Bridford Parkway Extension	Hornaday Rd. to Burnt Poplar Rd. (see Map ID C1) <i>Mitigation & partial construction</i>	1.1	N/A	4 lane divided	Yes	No		5,198,000
	T007	Federal	R-2612 A	US 421	Woody Mill and Neelley Rd. realignment and Interchanges (see Map ID D4 or D5) <i>Mitigation & Right-of-way (Sect. A) Only</i>	N/A	N/A	N/A	No	Yes	Yes (interchange)	1,947,000
	T001	Federal	U-471 I	Greensboro Signal / ITS System	Replacement and Expansion	N/A	N/A	N/A	No	No	Yes	24,050,000
	T011	Federal	W-5114	NC 68	East Harrell Road to Bartonshire Drive. Add center turn lane. (see Map ID B1) <i>Right-of-way Only</i>	0.4	2	2	No	N/A		52,000
A1	L001	Local		Creek Ridge Road	Rehobeth Church Rd. to Randleman Rd.	1.2	2 lane	3 lane	Yes	No		5,600,000
A2	L002	Local	PO4160	Hornaday Rd. Extension	Hornaday Rd. to Chimney Rock Rd.	0.6	N/A	3	Yes	No		4,300,000
	T012	State	R-2413	US 220 / NC 68 Connector	NC 68 / US 220 Intersection to Pleasant Ridge Rd. (see Map ID D32 or E43) <i>Mitigation Only</i>	12.4	N/A	N/A	No	Yes		3,473,000
	T014	State	U-2524 AE	Western Urban Loop	Interchange at High Point Rd. Relocation (U-2412B) (see Map ID D34) <i>Right-of-way Only</i>	N/A	N/A	N/A	No	Yes		1,000,000
A3	T002	State	U-4750	Hornaday Rd. Bridge	Grade Separation over Greensboro Urban Loop	N/A	N/A	3	Yes	No		6,400,000
	T053	State	U-2525 B	Eastern Urban Loop	US 29 to US 70 (see Map ID E44) <i>Right-of-way Only</i>	4.6	N/A	N/A	No	Yes		7,700,000
N/A	T015	Various	Various (B)	Various	Bridge Projects	N/A	N/A	N/A	Yes	N/A		1,157,000
N/A	T016	Various	Various (W, S)	Various	Hazard Elimination Projects	N/A	N/A	N/A	Yes	N/A		385,000
N/A	T017	Various	Various (P)	Various	Passenger Rail Projects	N/A	N/A	N/A	No	N/A		1,494,600
N/A	T018	Various	Various (E)	Various	Enhancement Projects	N/A	N/A	N/A	Yes	N/A		4,482,000
N/A	T019	Various	Various (T)	Various	Public Transportation Projects	N/A	N/A	N/A	No	N/A		69,697,287
N/A	T020	Various	Various (C)	Various	Congestion Mitigation and Air Quality (CMAQ) Projects	N/A	N/A	N/A	Yes	N/A		Included in B35 and B37
N/A	T079	Various	Various (C)	Various	Maintenance (roadway)	N/A	N/A	N/A	Yes	N/A		38,596,918

Figure 10d - 2010 Project Costs

2010												
Map ID	Project ID	Funding	TIP or Bond ID	Facility	Description / Extents	Length (miles)	Existing # Lanes	Horizon Year # Lanes	BiPed	Regionally Significant?	CMAQ	PROJECT COSTS
BI	T011	Federal	W-5114	NC 68	East Harrell Road to Bartonshire Drive. Add center turn lane. (see 2009 for remainder of project)	0.4	2	3	No	N/A		900,000
	T003	Federal	R-2309	US 220	Horse pen Creek Rd. to US 220-NC 68 Connector (R-2413) (see Map ID D1) <i>Partial Construction</i>	6.3	2 lane	2 lane	Yes	Yes		12,770,000
	T004	Federal	U-2412 B	High Point Road	Vickrey Chapel Rd. to Hilltop Rd. (see Map ID D2) <i>Right-of-way only; remainder in High Point MPO</i>	3.8 / 7.8	3 lane	3 lane	Yes	Yes		10,600,000
	T005	Federal	R-261 I	West Market St.	NC 68 to Bunker Hill Rd. in Colfax (See Map ID D3) <i>Mitigation only</i>	3.6	2 lane	2 lane	Yes	Yes		70,000
	T012	State	R-2413 C	NC 68 / US 220 Connector	NC 68 / US 220 Intersection to Haw River (see Map ID D32) <i>Partial Construction</i>	3.9/12.4	N/A	4 lane freeway	No	Yes		12,900,000
	T012	State	R-2413 A/B	NC 68 / US 220 Connector	Brookbank Rd. to Haw River (see Map ID D32) <i>Right-of-way only</i>	7.5/12.4	N/A	4 lane freeway	No	Yes		9,100,000
	T053	State	U-2525 B	Eastern Urban Loop	US 29 to US 70 (see Map ID E49) <i>Mitigation and Right-of-way</i>	12.6	N/A	6 lane freeway	No	Yes		11,312,000
N/A	T015	Various	Various (B)	Various	Bridge Projects	N/A	N/A	N/A	Yes	N/A		1,157,000
N/A	T016	Various	Various (W, SI)	Various	Hazard Elimination Projects	N/A	N/A	N/A	Yes	N/A		385,000
N/A	T017	Various	Various (P)	Various	Passenger Rail Projects	N/A	N/A	N/A	No	N/A		1,494,600
N/A	T018	Various	Various (E)	Various	Enhancement Projects	N/A	N/A	N/A	Yes	N/A		4,482,000
N/A	T019	Various	Various (T)	Various	Public Transportation Projects	N/A	N/A	N/A	No	N/A		25,754,405
N/A	T020	Various	Various (C)	Various	Congestion Mitigation and Air Quality (CMAQ) Projects	N/A	N/A	N/A	Yes	N/A		Included in B35 and B37
N/A	TO79	Various	Various (C)	Various	Maintenance (roadway)	N/A	N/A	N/A	Yes	N/A		38,596,918

Figure 10e - 2012 Project Costs

2012												
Map ID	Project ID	Funding	TIP or Bond ID	Facility	Description / Extents	Length (miles)	Existing # Lanes	Horizon Year # Lanes	BiPed	Regionally Significant?	CMAQ	PROJECT COSTS
CI	T006	Federal	U-4006	Bridford Parkway Extension	Hornaday Rd. to Burnt Poplar Rd. (see 2009 for remainder of project)	1.1	N/A	4 lane divided	Yes	No		9,600,000
	T003	Federal	R-2309	US 220	Horse pen Creek Rd. to US 220-NC 68 Connector (R-2413) (see Map ID D1) <i>Partial Construction</i>	6.3	2 lane	2 lane	Yes	Yes		12,770,000
	T004	Federal	U-2412 B	High Point Road	Vickrey Chapel Rd. to Hilltop Rd. (see Map ID D2) <i>Mitigation and partial construction; remainder in High Point MPO</i>	3.8 / 7.8	3 lane	3 lane	Yes	Yes		8,940,000
	T005	Federal	R-261 I	West Market St.	NC 68 to Bunker Hill Rd. in Colfax (See Map ID D3) <i>Partial Construction</i>	3.6	2 lane	2 lane	Yes	Yes		9,267,000
	T007	Federal	R-2612 B	US 421	Neelley Rd. and Williams Dairy Rd. realignment and Interchange; (see Map ID D4 or D5) <i>Right-of-way only</i>	0.6	2 lane	2 lane	No	Yes	Yes (interchange)	2,570,000
	T012	State	R-2413 C	NC 68 / US 220 Connector	NC 68 / US 220 Intersection to Haw River (see Map ID D32) <i>Partial Construction</i>	3.9/12.4	N/A	4 lane freeway	No	Yes		25,800,000
	T012	State	R-2413 A/ B	NC 68 / US 220 Connector	Brookbank Rd. to Haw River (see Map ID D32) <i>Right-of-way only</i>	7.5/12.4	N/A	4 lane freeway	No	Yes		9,100,000
N/A	T015	Various	Various (B)	Various	Bridge Projects	N/A	N/A	N/A	Yes	N/A		1,157,000
N/A	T016	Various	Various (W, SI)	Various	Hazard Elimination Projects	N/A	N/A	N/A	Yes	N/A		385,000
N/A	T017	Various	Various (P)	Various	Passenger Rail Projects	N/A	N/A	N/A	No	N/A		1,494,600
N/A	T018	Various	Various (E)	Various	Enhancement Projects	N/A	N/A	N/A	Yes	N/A		4,482,000
N/A	T019	Various	Various (T)	Various	Public Transportation Projects	N/A	N/A	N/A	No	N/A		70,231,798
N/A	T020	Various	Various (C)	Various	Congestion Mitigation and Air Quality (CMAQ) Projects	N/A	N/A	N/A	Yes	N/A		Included in B35 and B37
N/A	TO79	Various	Various (C)	Various	Maintenance (roadway)	N/A	N/A	N/A	Yes	N/A		38,596,918

Figure 10f - 2015 Project Costs

2013-2015												
Map ID	Project ID	Funding	TIP or Bond ID	Facility	Description / Extents	Length (miles)	Existing # Lanes	Horizon Year # Lanes	BiPed	Regionally Significant?	CMAQ	PROJECT COSTS
D1	T003	Federal	R-2309	US 220	Horse pen Creek Rd. to US 220-NC 68 Connector (R-2413) (see 2009, 2010, and 2012 for remainder of project)	6.3	2 lane	4 lane divided	Yes	Yes		12,770,000
D2	T004	Federal	U-2412 B	High Point Road	Vickrey Chapel Rd. to Hilltop Rd. (see 2009, 2010, and 2012 for remainder of project); remainder in High Point MPO	3.8 / 7.8	3 lane	6 lane divided	Yes	Yes		15,800,000
D3	T005	Federal	R-261 I	West Market St.	NC 68 to Bunker Hill Rd. in Colfax (see 2009, 2010, and 2012 for remainder of project)	3.6	2 lane	4 lane divided	Yes	Yes		4,633,000
D4	T007	Federal	R-2612 A	US 421	Woody Mill and Company Mill Rd. realignment and Interchange; (see 2009 for remainder of project)	0.4	2 lane	2 lane	No	Yes	Yes	16,100,000
D5	T007	Federal	R-2612 B	US 421	Neelley Rd. and Williams Dairy Rd. realignment and Interchange; (see 2009 for remainder of project)	0.6	2 lane	2 lane	No	Yes	Yes	16,370,000
D6	T004	Federal	U-2412 B	Mackay Road	High Point Rd. to Atwater Drive	0.2 / 7.8	2 lane	5 lane	Yes	No		Included in funding for project B23
D7	T009	Federal	Bond Candidate	Norwalk Street Extension	Existing Norwalk St. to Boston St. (includes grade separation)	0.3	N/A	3 lane	Yes	No		5,100,000
D8	T010	Federal	U-4757	Market Street	Intersection Improvements at Gallimore Dairy Rd. and Friendly Ave.	N/A	N/A	N/A	Yes	N/A		2,000,000
D9	L003	Local		Sandy Ridge Road	I-40 to West Market St.	1.0	2 lane	4 lane divided	Yes	Yes		5,600,000
D10	L004	Local	P03879	Lake Jeanette Road	Lawndale Ave. to N Elm St.	2.0	2-3 lane	2 lane divided, 3	Yes	No		5,100,000
D11	L005	Local	Bond Candidate	Alamance Church Road	Martin Luther King Jr. Dr. to City Limits	1.6	2 lane	4 lane divided	Yes	No		5,000,000
D12	L006	Local	Bond Candidate	Florida Street Extension	East Lee St. to McConnell Rd.	0.5	N/A	4 lane divided	Yes	Yes		5,500,000
D13	L007	Local	Bond Candidate	Horse pen Creek Road	New Garden Rd. to Battleground Ave.	3.4	2 lane	4 lane divided	Yes	No		22,090,000
D14	L008	Local	P03741	New Garden Road	Jefferson Rd. to Brassfield Rd.	0.8	2 lane	4 lane divided	Yes	Yes		4,200,000
D15	L009	Local	P04556	Mackay Road	Atwater Drive to Williamsborough Lane	0.7	2 lane	5 lane	Yes	No		2,800,000
D16	L010	Local	PO4554	Battleground Avenue	Intersection Improvements at Benjamin Prkwy. and Cone Blvd.	N/A	5 lane	N/A	Yes	N/A		1,500,000
D17	L011	Local	PO4553	Battleground Avenue	Intersection Improvements at Westridge Road	N/A	5 lane	N/A	Yes	N/A		3,500,000
D18	L012	Local	PO4263	Battleground Avenue	Intersection Improvements at Brassfield Drive	N/A	5 lane	N/A	No	N/A		354,000
D19	L013	Local	Bond Candidate	Stanley Road	Koger Blvd. to Hilltop Rd.	1.1	2 lane	5 lane	Yes	No		6,800,000
D20	L014	Local	P04552	Church Street	Wendover Ave. to Cone Blvd.	1.8	3 lane	4 lane divided-5	Yes	No		11,670,000
D21	L015	Local	Bond Candidate	Vandalia Road	Elm-Eugene St. to Pleasant Garden Rd.	1.4	2 lane	5 lane	Yes	No		8,300,000
D22	L016	Local	P03880	Merritt Drive	I-40 to High Point Rd.	1.0	3 lane	4 lane divided	Yes	No		5,200,000
D23	L017	Local		East Cone Boulevard Extension	Existing Cone Blvd. to Nealtown Rd. Extension (includes southern portion of Nealtown Rd. Extension)	N/A	N/A	2	Yes	Yes		8,100,000
D24	L018	Local	Bond Candidate	Church Street	Streetscape, Washington St. to Summit Ave.	0.4	N/A	N/A	Yes	No		5,000,000
D25	L019	Local	Bond Candidate	East Cone Boulevard Extension (Phase II)	Nealtown Rd. Extension to Hines Chapel Rd. (includes widening of existing and new location)	2.0	2	4 lane divided	Yes	Yes		15,000,000
D26	L020	Local	Bond Candidate	Benjamin Parkway / Bryan Boulevard	Holden Road to Wendover Avenue	1.2	5 lane	6 lane	Yes	Yes		5,500,000
D27	L021	Local	Bond Candidate	Fleming Rd / Lewiston Rd Connector	Fleming Rd. to Lewiston Rd. connection	0.6	N/A	4 lane divided	Yes	Yes		8,250,000
D28	L022	Local	Bond Candidate	Horse pen Creek Rd. / Fleming Rd. Connector	Isaacson Blvd. to Inman Rd.	0.9	N/A	4 lane divided	Yes	No		7,200,000
D29	L023	Local		Mackay Road	Railroad grade separation	N/A	N/A	N/A	Yes	No		15,000,000
D30	L024	Local	Bond Candidate	Hilltop Road	Railroad grade separation	N/A	N/A	N/A	Yes	No		15,000,000
D31	L025	Local	Bond Candidate	West Market St.	Intersection Improvements at College Road	N/A	5 lane	N/A	Yes	N/A		4,500,000
D32	T012	State	R-2413 C	NC 68 / US 220 Connector	NC 68 / US 220 Intersection to Haw River (see 2009, 2010, and 2012 for remainder of project)	3.9/12.4	N/A	4 lane freeway	No	Yes		12,900,000
	T012	State	R-2413 A/B	NC 68 / US 220 Connector	Edgefield Road to NC 68 / US 220 Intersection (see Map ID D32) (see 2009, 2010, and 2012 for remainder of project)	7.5/12.4	N/A	4 lane freeway	No	Yes		66,900,000
D33	T013	State	U-3314 B	I-40/ I-85 Corridor	MPO Boundary to I-85; Intelligent Transportation System (ITS) Installation.	N/A	N/A	N/A	No	N/A		17,200,000
D34	T014	State	U-2524 AE	Western Urban Loop	Interchange at High Point Rd. Relocation (U-2412B) (see 2009 for remainder of project)	N/A	N/A	N/A	No	Yes		12,100,000
	T053	State	U-2525 B	Eastern Urban Loop	US 29 to US 70 (see Map ID E49) Mitigation & Right-of-way /partial construction of B	12.6	N/A	6 lane freeway	No	Yes		98,687,000
N/A	T015	Various	Various (B)	Various	Bridge Projects	N/A	N/A	N/A	Yes	N/A		5,380,000
N/A	T016	Various	Various (W, SI)	Various	Hazard Elimination Projects	N/A	N/A	N/A	Yes	N/A		2,310,000
N/A	T017	Various	Various (P)	Various	Passenger Rail Projects	N/A	N/A	N/A	No	N/A		4,483,800
N/A	T018	Various	Various (E)	Various	Enhancement Projects	N/A	N/A	N/A	Yes	N/A		3,050,000
N/A	T019	Various	Various (T)	Various	Public Transportation Projects	N/A	N/A	N/A	No	N/A		83,963,689
N/A	T020	Various	Various (C)	Various	Congestion Mitigation and Air Quality (CMAQ) Projects	N/A	N/A	N/A	Yes	N/A		Included in B35
N/A	TO79	Various	Various (C)	Various	Maintenance (roadway)	N/A	N/A	N/A	Yes	N/A		141,191,459

Figure 10g - 2025 Project Costs

2016-2025												
Map ID	Project ID	Funding	TIP or Bond ID	Facility	Description / Extents	Length (miles)	Existing # Lanes	Horizon Year # Lanes	BiPed	Regionally Significant?	CMAQ	PROJECT COSTS
E1	T021	Federal	U-4015 A	Gallimore Dairy Road	NC 68 to International Drive	1.6	2 lane	4 lane divided	Yes	No		6,450,000
E2	T022	Federal	R-4707	US 29	Reedy Fork Parkway / US 29 Interchange (includes improvements to Summit Ave. and Reedy Fork Parkway)	1.0	4 lane freeway	6 lane freeway	Yes	Yes		22,196,000
E3	T023	Federal	U-5003	Pegg / Thatcher Connector	Gallimore Dairy Rd. to Market St. (includes grade separation)	2.1	N/A	4 lane divided	Yes	No		25,600,000
E4	T024	Federal	R-2910	US 70	Rock Creek Dairy Rd. to MPO Boundary (remaining portion in Burlington-Graham MPO)	0.32 / 5.4	2 lane	4 lane divided	Yes	Yes		3,980,000
E5	T025	Federal	U-2581 B	US 70	Mt Hope Church Rd. to Rock Creek Dairy Rd. (Penry Rd. to Mt Hope Church Rd completed as part of Urban Loop)	4.95 / 5.2	2 lane	5 lane	Yes	Yes		34,600,000
E6	T026	Federal		Sandy Ridge Road Extension	West Market St. to I-40/ NC 68/ I-73 Connector (includes interchange)	1.0	N/A	4 lane divided	Yes	Yes		22,800,000
E7	T027	Federal		Lewiston Road / Pleasant Ridge Road	Urban Loop to NC 150 Relocation	5.0	2 lane	4 lane divided	Yes	Yes		31,200,000
E8	T028	Federal		Pleasant Ridge Road	Old Oak Ridge Rd. to Lewiston Rd.	3.2	2 lane	3 lane	Yes	No		13,300,000
	T029	Federal	I-3603	I-40 and I-85	West City Limits to East City Limits in Greensboro. Install Lighting on Routes.	N/A	N/A	N/A	No	N/A		3,200,000
E9	T030	Federal	I-4921	US 220	Randolph Co. Line to I-85; Upgrade to Interstate Standards	6.5/ 23	N/A	N/A	No	N/A		18,540,000
E10	T031	Federal	R-0952	I-40 BUS/ US 421	Forsyth Co. Line to Sandy Ridge Rd. Pavement and Bridge Rehabilitation.	2.7/ 8.5	N/A	N/A	No	N/A		17,270,000
E11	T032	Federal	R-2808	I-85 BUS/ US 29-70	MAB to I-85; Safety Improvements and Bridge Replacement.	1.2/ 31.1	N/A	N/A	No	N/A		224,000
E12	T033	Federal		Battleground Avenue	Cotswold Ave. to Westridge Rd.	1.4	5 lane	6 lane divided	Yes	Yes		20,000,000
E13	T034	Federal		Battleground Avenue Crossover	Cornwallis Dr. to Wendover Avenue	1.0	5 lane	6 lane divided	Yes	Yes		15,000,000
E14	T035	Federal	U-3617	West Market St.	Bunker Hill Rd. to Forsyth County Line	3.6	2 lane	4 lane divided	Yes	Yes		11,171,000
E15	T036	Federal		NC 68	Peebles Road to Rockingham County Line	8.9	2	4 lane divided	No	Yes		58,114,000
E16	T037	Federal		NC 68	Market St. to Pleasant Ridge Rd.	2	4 lane	6 lane divided	No	Yes		10,000,000
E17	T038	Federal		NC 68 & I-40 Interchange	Interchange Reconfiguration	N/A	N/A	N/A	No	N/A		20,000,000
E18	T039	Federal		Wendover Avenue & Bus I-40 Interchange	Interchange Reconfiguration	N/A	N/A	N/A	No	N/A		20,000,000
E19	T040	Federal		US 29	Upgrade to Interstate Standards, N of Hicone Rd. to Rockingham Co. line	5.5	4 lane freeway	6 lane freeway	No	Yes		5,930,000
E20	T041	Federal		South Dudley Street	Railroad grade separation	N/A	N/A	N/A	No	No		6,400,000
E21	T042	Federal		South English Street	Railroad grade separation	N/A	N/A	N/A	No	No		6,400,000
E22	T043	Federal		Benbow Road	Railroad grade separation	N/A	N/A	N/A	No	No		3,750,000
E23	T044	Federal		Knox Road Extension	Carmon Rd. to Frieden Church Rd. (with Railroad grade separation)	0.3	N/A	2 lane	Yes	No		4,900,000
E24	T045	Federal	Bond Candidate	Tate Street	Railroad grade separation	N/A	N/A	N/A	No	No		10,000,000
E25	T046	Federal		Franklin Boulevard	Railroad grade separation	N/A	N/A	N/A	No	No		8,500,000
E26	T047	Federal	Bond Candidate	Aycock Street	Railroad underpass replacement (in conjunction with PART)	N/A	N/A	N/A	No	No		10,000,000
E27	T048	Federal		East Market Street	Railroad underpass replacement	N/A	N/A	N/A	No	No		30,000,000
E28	T049	Federal		Carmon Road Extension	Knox Rd. to McLeansville Rd.	1.0	N/A	2 lane	Yes	No		4,200,000
E29	L026	Local	Bond Candidate	Alamance Church Road	City Limits to I-85	1.2	2 lane	4 lane divided	Yes	Yes		6,800,000
E30	L027	Local	Bond Candidate	McConnell Road	City Limits to I-40 Business	1.6	N/A	4 lane divided	Yes	Yes		28,300,000
E31	L028	Local	Bond Candidate	Youngs Mill Rd, Extension	McConnell Rd. to North of US 70	2.7	2 lane	4 lane divided	Yes	Yes		39,100,000
E32	L029	Local	Bond Candidate	Randleman Road	Glendale Drive to Urban Loop	0.6	2 lane	4 lane divided	Yes	Yes		2,000,000
E33	L030	Local	Bond Candidate	Burlington Road	O'Ferrell Street to Ward Road	0.4	2 lane	3 lanes	Yes	No		1,400,000
E34	L031	Local		Church Street	Cone Boulevard to Urban Loop	2.0	3 lane	4 lane divided -5	Yes	No		15,000,000
E35	L032	Local	Bond Candidate	Westridge Road	Whitehurst Rd. to Bryan Blvd.	0.5	2 lane	4 lane divided	Yes	No		2,500,000
E36	L033	Local		Elm Street	Wendover Ave. to Cone Blvd.	1.6	3 lane	4 lane divided-5	Yes	No		10,000,000
E37	L034	Local		Holts Chapel Road Upgrade	East Market St. to US 70	3.6	2 lane	3 lane	Yes	No		23,040,000
E38	L035	Local	Bond Candidate	Burnt Poplar Road	Swing Rd. to Regional Rd.	2.9	2 lane	3 lane	Yes	No		12,000,000
E39	L036	Local	Bond Candidate	Pleasant Ridge Road	West Market St. to City Limits	2.4	2 lane	4 lane divided	Yes	No		15,000,000
E40	L037	Local	Bond Candidate	Pleasant Ridge Road	City Limits to Old Oak Ridge Rd.	1.0	2 lane	4 lane divided	Yes	No		6,100,000
E41	T014	State	U-2524 C/D	Western Urban Loop	Bryan Boulevard to Lawndale Dr.	5.0	N/A	6 lane freeway	No	Yes		215,688,000

Figure 10g (cont.)- 2025 Project Costs

2016-2025												
Map ID	Project ID	Funding	TIP or Bond ID	Facility	Description / Extents	Length (miles)	Existing # Lanes	Horizon Year # Lanes	BiPed	Regionally Significant?	CMAQ	PROJECT COSTS
E42	T014	State	U-2524 D	Western Urban Loop	Lake Brandt / Cotswold Connector (Lake Brandt Rd. to Cotswold Rd.)	0.3	3 lane	3 lane	Yes	No		Included in funding for project B17
E43	T012	State	R-2413 A/B	NC 68 / US 220 Connector	Edgefield Road to NC 68 / US 220 Intersection (see 2009 & 2015 for remainder of project)	7.5/12.4	N/A	4 lane freeway	No	Yes		22,300,000
E44	T053	State	U-2525 C	Eastern Urban Loop	Lawndale Dr. to US 29 (Includes completion of interchange at US 29) (see 2015 for remainder of project)	5.8 / 12.6	N/A	6 lane freeway	No	Yes		100,320,000
E45	T054	State		I-73 Connector	NC 68 to Bryan Boulevard	1.3	N/A	6 lane freeway	No	Yes		76,800,000
E46	T055	State		Pleasant Ridge Road Relocation @ I-73 Connector	Montmartre Road to Cude Road	1.7	N/A	3 lane	Yes	Yes		14,900,000
E47	T056	State		Bryan Boulevard Loop at I-73 Connector	Montmartre Road to Pleasant Ridge Road	2.3	N/A	4 lane divided	No	Yes		37,750,000
E48	T057	State		Ritters Lake Road Extension	Elm-Eugene St. to Old Randleman Rd.	0.4	2 lane	3 lane	Yes	No		2,400,000
E49	T053	State	U-2525 B	Eastern Urban Loop	US 29 to US 70 (see 2009, 2010, and 2015 for remainder of project)	4.6/ 12.6	N/A	6 lane freeway	No	Yes		29,125,000
N/A	T015	Various	Various (B)	Various	Bridge Projects	N/A	N/A	N/A	Yes	N/A		13,265,000
N/A	T016	Various	Various (W, SI)	Various	Hazard Elimination Projects	N/A	N/A	N/A	Yes	N/A		3,850,000
N/A	T017	Various	Various (P)	Various	Passenger Rail Projects	N/A	N/A	N/A	No	N/A		14,946,000
N/A	T018	Various	Various (E)	Various	Enhancement Projects	N/A	N/A	N/A	Yes	N/A		40,000,000
N/A	T019	Various	Various (T)	Various	Public Transportation Projects	N/A	N/A	N/A	No	N/A		307,456,675
N/A	T020	Various	Various (C)	Various	Congestion Mitigation and Air Quality (CMAQ) Projects	N/A	N/A	N/A	Yes	N/A		10,865,600
N/A	TO79	Various	Various (C)	Various	Maintenance (roadway)	N/A	N/A	N/A	Yes	N/A		349,881,548

Figure 10h- 2035 Project Costs

2026-2035												
Map ID	Project ID	Funding	TIP or Bond ID	Facility	Description / Extents	Length (miles)	Existing # Lanes	Horizon Year # Lanes	BiPed	Regionally Significant?	CMAQ	PROJECT COSTS
F1	T059	Federal		Brown Summit Rd. at US 29	Summit Ave. to Brangu St. and Interchange	N/A	N/A	4 lane divided	Yes	Yes		36,060,000
F2	T061	Federal	I-4924	Airport Connector (I-73/I-74)	Forsyth Co. Line to NC 68	5.0	N/A	4 lane divided	No	Yes		69,800,000
F3	T062	Federal		I-40 Connector	I-40 to I-73 / I-74 Connector	1.7	N/A	4-6 lane freeway	No	Yes		382,300,000
F4	T063	Federal		High Rock Road Extension	US 70 to Frieden Church Rd. (improve existing and new)	3.1	2 lane	2 lane	Yes	No		20,503,000
F5	T064	Federal		Burnetts Chapel / Steeple Chase / Hagen Stone Park Connector	Burnetts Chapel to Steeple Chase; Steeple Chase to Hagan Stone Park; Hagan Stone Park to Company Mill	5.2	2 lane	2 lane	Yes	Yes		36,400,000
F6	T065	Federal		Youngs Mill / Southeast School Connector	Millpoint Rd. to Southeast School Rd.	1.2	N/A	2 lane	Yes	Yes		5,200,000
F7	T066	Federal		South Holden Road	I-85 Business to Randleman Rd.	2.6	2 lane	4 lane divided	Yes	Yes		21,050,000
F8	T067	Federal		NC 150	NC 68 to Lake Brandt Rd. (excludes new location)	7.5	2 lane	3 lane	Yes	Yes		27,106,000
F9	T068	Federal		NC 150 Relocation	Summerfield Rd. to Brookbank Rd.	1.5	N/A	2 lane	Yes	Yes		8,300,000
F10	T069	Federal		Vandalia Road Extension	Pleasant Garden Rd. to Alamance Church Rd.	2.5	N/A	4 lane divided	Yes	Yes		28,900,000
F11	L038	Local		Rankin Mill / Flemingfield Connector	South of Keeley Rd. Huffine Mill Rd.	0.7	2 lane	3 lane	Yes	No		4,300,000
F12	L039	Local		Nealtown Road Extension	East Cone Blvd. to McKnight Mill Rd.	2.0	2 lane	2-3 lane	Yes	No		2,800,000
F13	L040	Local	Bond Candidate	Lee Street	Streetscape, Coliseum Boulevard to Eugene St.	1.8	N/A	N/A	Yes	N/A		13,000,000
F14	L041	Local		Clapps Farm Road	McConnell Rd. to Mt. Hope Church Rd.	2.0	N/A	4 lane divided	Yes	Yes		15,600,000
F15	L042	Local	Bond Candidate	Summit Avenue	Streetscape, Murrow Boulevard to Wendover Ave.	1.0	N/A	N/A	Yes	N/A		10,000,000
F16	L043	Local	Bond Candidate	High Point Road	Streetscape, I-40 to Chapman St.	1.5	N/A	N/A	Yes	N/A		11,000,000
F17	L044	Local	Bond Candidate	Summit Avenue	McKnight Mill Rd. to Bryan Park Rd.	4.7	2 lane	4 lane divided	Yes	No		30,000,000
F18	L045	Local	Bond Candidate	Bass Chapel Road	Air Harbor to Old Lake Jeanette Rd.	2.0	3 lane	4 lane divided	Yes	No		27,000,000
F19	L046	Local	Bond Candidate	Air Harbor	Lake Brandt to Bass Chapel	0.5	3 lane	4 lane divided	Yes	No		3,100,000
F20	L047	Local	Bond Candidate	Hicone Road	Summit Ave. to Hines Chapel Rd.	3.3	2 lane	5 lane	Yes	No		16,500,000
F21	L048	Local		Hicone Road Extension	Existing Hicone Rd. to Lee's Chapel Rd.	0.6	N/A	3 lane	Yes	No		3,200,000
F22	T070	State	R-2577	US 158	Forsyth Co. Line to US-220 (includes Bypass; remaining portion in Winston-Salem MPO)	6.8 / 18.8	2 lane	4 lane divided	Yes	Yes		46,600,000
F23	T071	State	R-2580	US 158	US 220 - Rockingham Co Line (remaining portion in Rockingham Co.)	1.6/ 15	2 lane	4 lane divided	Yes	Yes		10,450,000
F24	T014	State	U-2524 F	Western Urban Loop	Interchange at Proposed Lewiston/ Fleming Road Extension	N/A	N/A	N/A	No	Yes		15,000,000
F25	T053	State	U-2525 D	Eastern Urban Loop	Interchange at proposed Cone Boulevard Extension	N/A	N/A	N/A	No	Yes		15,000,000
F26	T074	State		Williams Dairy / Millpoint Road Connector	Millpoint Rd. to Southeast School Rd.	0.8	N/A	2 lane	Yes	No		3,400,000
F27	T075	State		Bishops Rd. / Vernondale Rd. Connector	South Holden Rd. to Rehobeth Church Rd.	0.5	2 lane	3 lane	Yes	No		4,500,000
F28	T076	State		Turner Smith Extension	McLeansville Rd. eastward to Existing Turner Smith	0.5	N/A	3	Yes	Yes		2,874,000
F29	T077	State		Eversfield Extension	Oak Ridge Rd. to Brookbank Rd.	1.4	N/A	2 lane	Yes	No		5,858,000
F30	T078	State		Mt. Hope Church Extension	McPherson-Clay to Alamance Church Rd.	0.4	N/A	2 lane	Yes	No		1,656,000
N/A	T015	Various	Various (B)	Various	Bridge Projects	N/A	N/A	N/A	Yes	N/A		13,265,000
N/A	T016	Various	Various (W, SI)	Various	Hazard Elimination Projects	N/A	N/A	N/A	Yes	N/A		3,850,000
N/A	T017	Various	Various (P)	Various	Passenger Rail Projects	N/A	N/A	N/A	No	N/A		14,946,000
N/A	T018	Various	Various (E)	Various	Enhancement Projects	N/A	N/A	N/A	Yes	N/A		25,000,000
N/A	T019	Various	Various (T)	Various	Public Transportation Projects	N/A	N/A	N/A	No	N/A		376,738,642
N/A	T020	Various	Various (C)	Various	Congestion Mitigation and Air Quality (CMAQ) Projects	N/A	N/A	N/A	Yes	N/A		10,865,600
N/A	TO79	Various	Various (C)	Various	Maintenance (roadway)	N/A	N/A	N/A	Yes	N/A		569,920,173

Figure 10i — Non-Capacity-Adding Roadway Project Summary

Non-Capacity Roadway Projects Costs				
(In Thousands of Dollars)				
Period	Freeway Resurfacing*	Bridge Projects	Safety Projects	Railroad Improvements
2009	N/A	1,160	390	1,490
2010	N/A	0	0	1,490
2011-2012	N/A	2,580	0	2,990
2010-2015	N/A	5,380	2,310	4,480
2016-2025	N/A	13,270	3,850	14,950
2026-2035	N/A	13,270	3,850	14,950
Totals	N/A	35,660	10,400	40,350

* Freeway resurfacing was included in the maintenance costs forecast.

Figure 10i summarizes the non-capacity-adding roadway categories by horizon year. The costs shown in this figure have been reflected in the total costs shown in Figure 10b for roadways. The costs shown in 2009, 2010, 2012, and 2015 are based on the project costs shown in the TIP. Costs were forecasted for 2025 and 2035 based on an annualized cost shown for 2015 in the TIP for the urban area. The annualized cost was summed through 2025 and 2035.

Transit Capital Costs

For GTA's capital costs, two scenarios were considered: *Existing + Committed* and *Trend*. The *Existing + Committed* scenario represents GTA continuing to operate existing services without adding many new services. Only committed capital expansions occur. This means that future bus purchases are limited to those that already have funding or that will be required to replace aging buses. In this scenario, GTA's fleet does not increase after 2009.

The *Trend* scenario represents a continuation of GTA's recent and past service expansions. This scenario is more consistent with community needs and with the Mobility Greensboro Plan than the first scenario. It assumes that GTA continues to expand its fleet through 2035 at roughly the same rate of expansion that is scheduled for the years 2006 through 2015. New services would accompany this fleet expansion.

The *Trend* scenario was assumed to continue in the future and therefore was used for the calculations of costs reflected in the plan.

Several cost assumptions are the same among the two scenarios:

- The contracted costs for the HEAT service are assumed to rise at 3% per year.
- Costs are based on the 2009-2015 MTIP and all funded projects are assumed to occur as scheduled.
- Transit security is \$45,000 in 2008 and is assumed to grow at the same rate as Section 5307 funding (3%).
- The new administration, operations, and maintenance facility is included in the 2015 horizon year.¹
- After 2015, replacement bus purchases are based on

¹ This is considered a committed project, because committed (funded) expansions include 26 small buses and 14 big buses. Just to park that many additional buses will take about 10,000 square feet, not counting access aisles and space between them. Recent improvements gave GTA about 20,000 more square feet at its current location, but most of it is already used to park the existing fleet. So in order for the committed expansions to occur, GTA will need additional storage space, at a minimum, and will also need additional maintenance facilities. These improvements are estimated to cost \$20 million.

the service life of different types of vehicles. Under federal rules, GTA's small buses are eligible to be replaced after 4 years of service, but we assumed replacement after 6 years. Full-size buses are eligible for replacement after 12 years, but we assumed replacement after 13 years. The assumptions reflect recent experiences and are more realistic due to the ordering and delivery time involved in vehicle purchases. Midsize buses (currently used as large HEAT buses) are replaced every 10 years.

Other cost assumptions are different for the two capital scenarios:

- *Existing + Committed*
 - The only unfunded projects to become funded are replacement buses. They occur as scheduled in the 2009-2015 MTIP.
 - The only expansion buses that are purchased are those funded in the draft 2009-2015 MTIP.
- *Trend*
 - All unfunded projects shown in the 2009-2015 MTIP become funded and occur as scheduled.
 - The rate of expansion is at about the same rate as 2009-2015. As a result, GTA's fleet expands by 15 big buses, 20 small buses, and 7 midsize buses in 2025 and 2035.

PART's capital costs are based on its short-term Capital Improvement Program (CIP) and the corresponding anticipated replacement schedule. The CIP includes vehicles, park & ride lots, intermodal and terminal facilities, and mini hubs, and all items in the CIP can be funded given the revenue assumptions above. No expansion of the PART fleet is forecast past 2012. The only capital items shown after that time are replacement buses and scheduled resurfacing of park-and-ride lots.

Total capital costs for GTA and PART are included in Figure 10b. Individual cost breakdowns for GTA and PART are included in **Figures 10p and 10q**. Detailed capital costs for GTA and PART are included in **Figures 10j and 10k**.

Figure 10j - GTA detailed capital costs

GTA Detailed Capital Costs	
(In Thousands of Dollars)	
2009	
10 expansion small buses	656,000
27 replacement small buses	1,774,000
2 expansion buses	714,000
Transit Security	91,350
Technology improvements (unfunded)	1,720,000
New facility (unfunded)	730,118
Total:	5,685,468
2010 (all TIP; funding status noted)	
13 replacement small buses (unfunded)	884,000
New facility (unfunded)	1,997,147
Transit Security (funded)	47,741
Total:	2,928,888
2011-2012 (all TIP; funding status noted)	
14 HEAT buses (7 small, 7 big; unfunded)	1,800,000
8 expansion buses (unfunded)	3,080,000
24 replacement small buses (unfunded)	1,920,000
Transit Security (funded)	99,821
New facility (unfunded)	15,659,105
Total:	22,558,926
2013-2015 (all TIP; funding status noted)	
26 replacement small buses (unfunded)	2,340,000
10 big HEAT buses (unfunded)	1,680,000
20 replacement buses (unfunded)	7,700,000
New facility (unfunded)	1,613,630
Transit Security (funded)	161,244
Total:	13,494,874
2016-2025 (all non-TIP)	
Replacement buses	23,797,000
Expansion buses	9,471,000
Transit Security	653,494
Total:	33,921,494
2026-2035 (all non-TIP)	
Replacement buses	26,257,000
Expansion buses	17,569,500
Transit Security	878,242
Total:	44,704,742
Grand Total:	123,294,392

Figure 10k - PART detailed capital costs

PART Detailed Capital Costs	
(In Thousands of Dollars)	
2009	
Park N Ride Lots & Amenities	4,995,000
Expansion buses and shuttles	7,240,000
Terminals, Intermodal Facilities, and Mini Hubs	13,418,998
Total:	25,653,998
2010	
Park N Ride Lots	2,695,000
Expansion and replacement buses and shuttles	1,850,000
Terminals, Intermodal Facilities, and Mini Hubs	307,518
Total:	4,852,518
2011-2012	
Park N Ride Lots	1,500,000
Expansion and replacement buses and shuttles	3,000,000
Terminals, Intermodal Facilities, and Mini Hubs	4,104,157
Total:	8,604,157
2013-2015	
Park N Ride Lots	0
Expansion and replacement buses and shuttles	600,000
Terminals, Intermodal Facilities, and Mini Hubs	7,969,327
Total:	8,569,327
2016-2025	
Park N Ride Lots	1,335,000
Replacement buses and shuttles	8,675,000
Total:	10,010,000
2026-2035	
Park N Ride Lots	1,335,000
Replacement buses and shuttles	8,225,000
Total:	9,560,000
Grand Total:	67,250,000

Non-motorized Capital Costs (Pedestrian and Bicycle)

The recommended investments for the bicycle and pedestrian element are based on 1) the current construction programs of the City of Greensboro, Guilford County, and the NCDOT; and 2) estimates of future funding levels based largely on these programs.

It is anticipated that more extensive improvements will be needed by 2035 as noted in the Greensboro Urban Area Bicycle, Pedestrian, and Greenway Master Plan.

The LRTP assumes the continuation of an aggressive program by the City of Greensboro to retrofit existing roadways with sidewalks. It also assumes continuation of the City's sidewalk petition program on residential streets at current levels. The LRTP also assumes continued implementation of the City and County Trail System.

The LRTP assumes sidewalks are included in all City of Greensboro roadway projects, as well as in NCDOT roadway improvement projects within the urban area. Additionally, bicycle accommodations (bike lanes or paved shoulders) are planned for certain roadway projects, including new construction, widening, or repaving. These costs are factored into the roadway cost estimates.

Bicycle and pedestrian facility capital costs and revenue forecasts were based on the assumption that currently planned funding levels will be maintained and certain additional revenue sources will become available.

MPO analysis includes committed STP-DA funds to be used for sidewalk improvements. The 2009-2015 TIP includes two enhancement projects for bicycle and pedestrian facilities. One project is for the Battleground Rail-Trail, while the other project is for various bicycle and pedestrian improvements. Both projects have significant STP-DA funding. The analysis also assumes the proposed 2008 Transportation Bond will fund the construction and maintenance of sidewalks for the period 2010 through 2035.

The City of Greensboro and Guilford County plan to construct several miles of trail over the period of the plan. The analysis includes committed STP-DA funding through 2015. The 2015, 2025, and 2035 horizon years

assume funding for construction and maintenance of trails through the proposed 2008 bond.

The year 2008 marks the City of Greensboro's bicentennial. The Greensboro Bicentennial Commission, appointed by City Council to plan the celebration of the city's 200th year, adopted the Greensboro Downtown Greenway as the signature project for Greensboro's Bicentennial commemoration. The Greenway has been included in the plan as it is expected to be constructed through a public-private partnership. The analysis reflects the greenway being constructed between 2015 and 2025.

The non-motorized total costs are included above in **Figure 10b**. A detailed cost breakdown for sidewalks, trails, and the Downtown Greenway has been included in **Figures 10l, 10m, and 10n**.

Greensboro Urban Area 2035 Long Range Transportation Plan

Figure 10l – Sidewalk detailed costs

Sidewalk Detailed Costs						
<small>(In Thousands of Dollars)</small>						
Period	Committed STP DA	Future STP DA	Bonds (Capital)	Bond (Maintenance)	Roadway Improvements	Total
2009	2,880	0	0	0	0	2,880
2010	1,630	0	0	0	0	1,630
2011-2012	0	0	0	0	0	0
2013-2015	0	0	15,950	4,410	3,290	23,650
2016-2025	0	0	15,950	4,410	3,620	23,980
2026-2035	0	0	19,420	4,410	0	23,830
Total	4,510	0	51,320	13,230	6,910	75,970

Figure 10m – Trail detailed costs

Trail Detailed Costs					
<small>(In Thousands of Dollars)</small>					
Period	Committed STP DA	Future STP-DA	Bonds (Capital)	Bond (Maintenance)	Total
2009	2,730	0	0	0	2,730
2010	0	0	0	0	0
2011-2012	0	0	0	0	0
2013-2015	5,310	0	13,500	900	19,710
2016-2025	0	0	13,440	4,630	18,070
2026-2035	0	0	13,780	4,630	18,410
Total	8,040	0	40,720	10,160	58,920

Figure 10n – Downtown Greenway Costs

Downtown Greenway Costs					
<small>(In Thousands of Dollars)</small>					
Period	Bonds	Private	STP DA	County	Total
2009-2015	7,000	7,000	0	1,000	15,000
2016-2025	3,000	3,000	0	0	6,000
Total	10,000	10,000	0	1,000	21,000

Greensboro Urban Area 2035 Long Range Transportation Plan

Figure 10o — Roadway Costs and Revenues

Roadway Costs and Revenues									
(In Thousands of Dollars)									
Period	Capital Costs	Roadway Capital Revenues			Capital Difference	Maintenance Costs	Maintenance Revenues		Maintenance Difference
		Highway TIP	Bonds				State	Local	
2009	100,370	96,310	9,900	5,840	54,590	38,600	15,990	0	
2010	61,270	61,270	0	0	28,760	20,760	8,000	0	
2011-2012	91,640	91,730	0	90	60,670	44,680	15,990	0	
2013-2015	461,770	283,610	178,160	0	99,740	75,750	23,990	0	
2016-2025	1,139,310	993,170	164,240	18,100	429,850	349,880	79,970	0	
2026-2035	909,520	782,850	136,500	9,830	649,890	569,920	79,970	0	
Totals	2,763,880	2,308,940	488,800	33,860	1,323,500	1,099,590	223,910	0	

Figure 10p — GTA Transit Costs and Revenues

GTA Transit Costs and Revenues					
(In Thousands of Dollars)					
Period	O&M Costs	Capital Costs	Total Costs	Total Revenues	Difference
2009	34,760	5,690	40,440	40,440	0
2010	15,870	2,930	18,800	18,800	0
2011-2012	34,270	22,560	56,830	56,830	0
2013-2015	52,930	13,490	66,420	67,230	810
2016-2025	203,910	33,920	237,830	239,810	1,980
2026-2035	254,260	44,700	298,970	299,560	590
Totals	596,000	123,290	719,290	722,670	3,380

Figure 10q — PART Transit Costs and Revenues

PART Transit Costs and Revenues					
(In Thousands of Dollars)					
Period	O&M Costs	Capital Costs	Total Costs	Total Revenues	Difference
2009	3,600	25,650	29,250	29,250	0
2010	2,100	4,850	6,950	6,950	0
2011-2012	4,800	8,600	13,400	13,400	0
2013-2015	7,900	8,570	16,470	16,730	260
2016-2025	34,410	10,010	44,420	67,640	23,220
2026-2035	53,430	9,560	62,990	77,180	14,190
Totals	106,240	67,240	173,480	211,150	37,670

Figure 10r — Pedestrian and Bicycle Costs and Revenues

Pedestrian & Bicycle Costs and Revenues*			
(In Thousands of Dollars)			
Period	Costs	Revenues	Difference
2009	5,600	5,600	0
2010	1,630	1,630	0
2011-2012	0	0	0
2013-2015	58,360	58,360	0
2016-2025	48,040	48,040	0
2026-2035	42,230	42,230	0
Totals	155,860	155,860	0

* Maintenance costs included in roadway costs.

Maintenance Cost Assumptions

Maintenance costs are divided into state roads, local roads, and transit. On-road bicycle and pedestrian facility maintenance is reflected as a part of state and local road maintenance.

State Road Maintenance Costs

State roadway maintenance funds were set to equal expected expenditures based on previous levels of revenues and expenses dedicated to this purpose. State road maintenance costs are based on historical NCDOT funding from 2000 to 2007 in Guilford County. The historical values were converted to 2008 dollars so the average annual rate of increase in costs could be obtained. These costs reflected a 7.5% annual rate of increase. However, a more conservative 5% growth factor was applied to forecast costs through 2035.

Local Road Maintenance Costs

Local road maintenance costs are covered through Powell Bill funds. The Powell Bill funding for the planning area was reviewed for the years 2000-2007. The amounts for each of these years were converted to 2008 dollars, which showed a trend of stagnant funding levels. A conservative no-growth assumption was applied to forecast the Powell Bill funding through 2035 based on the average annual funding level between 2000 and 2007. This flat trend reflects an increase in City-maintained lane-mileage and stagnation in state gas tax revenues.

MPO analysis also reflects additional funds coming from the proposed 2008 bond for local road maintenance.

Transit Maintenance and Operation Costs

- For **GTA's non-capital costs**, the MPO assumed the following annual costs are fixed: administration salaries/benefits, administration maintenance & operations (M&O), Depot salaries/benefits, and Depot M&O. These costs total \$2.54 million per year.
- Other M&O costs are assumed to increase as the size of the fleet increases. For calculation purposes, this is based on the number of large buses in the fleet. (It is assumed that small-bus purchases mirror

big-bus purchases).

- An examination of historical M&O costs allows us to assume that each big bus in the fleet accounts for about \$200,000 in M&O variable costs per year. The previous Long-Range Transportation Plan assumed a value of \$265,072 per bus, but that analysis did not separate out the fixed annual costs described above.
- **PART** provided forecasts for **M&O costs** through 2016. From 2016 through 2035, a 4.5% growth rate was used to project the M&O costs for PART.

Cost and Revenue Comparisons

The following tables compare costs to revenues by mode of transportation and further document that the plan meets the fiscal constraint test. In several cases, more revenues than costs are identified. In each such case, the percentage of overage is small and is within the realm of statistical insignificance. It is assumed for the future that available revenues will be fully utilized to meet the needs.

The MPO analysis assumes forecasted revenues will cover the capital and maintenance costs for roadway, transit, pedestrian, and bicycle projects. The analysis for the costs and revenues assumes continued growth at the federal, state, and local level. The forecasts are reasonably based on past trends and take into account recent increases in the cost of constructing transportation projects. The national economy is seeing a downturn that has trickled down to the state and local levels. However, the analysis does assume a positive turnaround in the economy in the next couple of years. The MPO will continue to closely observe funding levels in anticipation of the next LRTP update for the urban area.

Future Revenue Needs

An extensive set of future transportation improvement, service, and maintenance needs have been identified for the 2035 LRTP. The plan identifies a reasonably foreseeable financial plan under which these core needs can be addressed. However, for these future needs to be met, all levels of government are going to have to do their parts from the funding as well as the project and program development points of view. Key actions needed include the following:

- A balanced investment program including maintenance, strategic roadway capacity expansion, and functional, well-integrated pedestrian, bicycle and transit systems is necessary to effectively meet the needs of the community, the economy, and the quality of the life in the area.
- The federal government must maintain a strong presence in surface transportation. To do that, it must address current revenue shortfalls and identify viable long-term transportation finance measures.
- The state government must maintain a proactive stance in addressing state and metropolitan transportation needs. To do that, it must address current revenue shortfalls and identify viable long-term transportation finance measures. These strategies must recognize and support the complexity and multi-modal nature of metropolitan transportation needs and recognize that they extend beyond the strategic highway corridors.
- Local government must also identify sufficient investments to address local needs, leverage state and federal funds, and contribute towards meeting the needs of the state roadway system within the area.

Priority roadways for the future include the remaining portions of the Western and Eastern Loop, US 70 widening, and the Airport Connector. Transit priority projects include the construction of a new GTA facility for the growing fleet of buses and further expansion of services to reduce headways and overcrowding. There is also an increasing need for bicycle and pedestrian facilities as reflected in the Bicycle, Pedestrian, and Greenway Master Plan. It will be important for the urban area to balance funding across the various modes of transportation. As air-quality standards continue to tighten, the balance of building roadways, sidewalks, and bicycle facilities and expanding transit services will become increasingly important.

This page is intentionally left blank.