

## **Appendix III: Review of Service Plan and Cost Estimates**

Over the last fifteen years, the Georgia Department of Transportation (GDOT) and the Metro Atlanta Chamber of Commerce (MACOC) commissioned several studies to determine the viability of passenger rail service in the Macon-to-Atlanta corridor. While the Norfolk Southern's S-Line was identified as the most feasible alignment, these studies also reviewed various southern termini for the Macon-to-Atlanta corridor. The southern termini included Lovejoy, Griffin, Forsyth and Macon, and each end-of-line was accompanied by its own unique concept for operation of service.

For the purposes of this study, existing plans and studies prepared by others were used as the basis for assumptions regarding service planning and the associated capital and operations and maintenance (O&M) cost estimates. The project team did NOT conduct an independent engineering review of design plans, equipment needs or unit costs. The project team does not validate or endorse the design plans or cost estimates developed by others. A summary of those plans and their costs are shown below.

### **1995 GDOT Commuter Rail Plan**

Project Termini: Atlanta to Forsyth

Length: 77 miles

Stations: 9 (including MMPT)

Capital Cost: \$33,918,000 (FY1994 dollars)

Service Plan: 3 peak period round trips and 2 off-peak round trips

O&M Cost: \$2,887,000 (FY1994 dollars)

### **2001 GDOT Macon-to-Atlanta Environmental Assessment**

Project Termini: Atlanta to Macon

Length: 103 miles

Stations: 13 (including MMPT)

Capital Cost: \$325,800,000 (FY2000 dollars)

Service Plan: 4 Atlanta-Griffin and 2 Atlanta-Macon trips (one-way) per peak period

O&M Cost: \$16,200,000 (FY2000 dollars)

### **2005 GDOT Atlanta-to-Lovejoy Commuter Rail Project Management Plan**

Project Termini: Atlanta to Lovejoy

Length: 26 miles

Stations: 6 (including MMPT)

Capital Cost: \$105,870,000 (FY2004 dollars)

Service Plan: 4 Atlanta-Lovejoy trips (one-way) per peak period

O&M Cost: \$6,420,000 (FY2004 dollars)\*

\* *Service assumed to enter full operations in 2007*

### **2007 RL Banks Commuter Rail Plan Update**

Project Termini: Atlanta to Macon

Length: 103 miles

Stations: 13 (including MMPT)

Capital Cost (3 trains per peak period): \$366,000,000 (FY2007 dollars)

Capital Cost (6 trains per peak period): \$395,000,000 (FY2007 dollars)

O&M Cost (3 trains per peak period): \$17,200,000 (FY2007 dollars)

O&M Cost (6 trains per peak period): \$26,100,000 (FY2007 dollars)

## Project Capital Cost Assumptions

While the entire corridor between Macon and Atlanta is being evaluated by the project team for market viability, the team reduced the number of passenger stations from thirteen to seven. The original thirteen were both described in the 2001 Environmental Assessment and the 2007 RL Banks Commuter Rail Plan. In narrowing the list to seven, the project team selected the precise station locations based upon an assessment of station area development viability. To maximize the potential economic development, the team reviewed the proposed station areas based on key criteria, including:

- Developable land
- Potential ridership generators (employers, concentration of housing, universities)
- Drivers of real estate development/ demand (employment, underlying demographics, physical and location characteristics)
- Proximity of stations to one another
- Station platform/rail alignment interface

The list of stations identified by the Environmental Assessment and a subset of those stations used in the Macon to Atlanta Passenger Rail Study are shown in the Table 1. A summary of how these stations were selected is detailed in Appendix II – Station Screening Summary.

**Table 1: Stations Evaluated for the Study**

<b>Environmental Assessment/RL Banks</b>	<b>2010 Macon to Atlanta Passenger Rail Study</b>
MMPT	MMPT
East Point	
Hapeville	Hapeville
Forest Park	
Morrow	Morrow
Jonesboro	
Lovejoy	
Hampton	Hampton
Griffin	Griffin
Barnesville	
Forsyth	Forsyth
Bolingbroke	
Macon	Macon

## Project Capital Cost Estimates

The 2007 RL Banks Commuter Rail Plan Update produced the most current estimates for project capital costs and was used as the basis for the 2010 Atlanta to Macon Passenger Rail Study's cost estimates. RL Banks estimated that track improvements and 12 stations for the Atlanta/Macon project would cost \$306M, with another \$21.5M required to construct the Multi-modal Passenger Terminal (MMPT) in downtown Atlanta. Their estimate for locomotives and coach car fleet for the six-train scenario totaled \$67.2M, bringing their total cost of the project to \$395M (FY2007 \$).

Because the Macon to Atlanta Passenger Rail Study is assessing the viability of a rail scenario with only seven stations, the estimated capital costs for the six stations were removed. The RL Banks report specified line items for individual station facility costs, but aggregated the costs for station land and parking into subtotals.

**Table 2: RL Banks' Estimate of Costs (2007)**

Project Elements	Cost (FY07 \$)	Acreage	% Share	Land	Parking	
Bolingbroke Station	\$ (773,375)	3.5	4.6%	\$ (760,792)	\$ (688,496)	
Forsyth Station	\$ 773,375	3.44	4.5%	\$ 747,750	\$ 676,694	
Barnesville Station	\$ (773,375)	3.35	4.4%	\$ (728,187)	\$ (658,989)	
Griffin Station	\$ 2,321,000	7.1	9.3%	\$ 1,543,321	\$ 1,396,664	
Hampton Station	\$ 773,375	10.8	14.1%	\$ 2,347,587	\$ 2,124,503	
Lovejoy Station	\$ (773,375)	12.8	16.7%	\$ (2,782,325)	\$ (2,517,930)	
Jonesboro Station	\$ (773,375)	21	27.4%	\$ (4,564,752)	\$ (4,130,979)	
Morrow Station	\$ 773,375	9	11.7%	\$ 1,956,322	\$ 1,770,419	
Forest Park Station	\$ (2,321,000)	4.15	5.4%	\$ (902,082)	\$ (816,360)	
Hapeville Station	\$ 2,321,000	1	1.3%	\$ 217,369	\$ 196,713	
East Point Station	\$ (3,867,000)	0.5	0.7%	\$ (108,685)	\$ (98,357)	
	<b>\$ (9,281,500)</b>			<b>\$ (9,846,822)</b>	<b>\$ (8,911,111)</b>	<b>TOTAL</b>
						<b>\$ (28,039,433)</b>

Source: RL Banks Commuter Rail Plan Update, Table 16

The total cost savings for elimination of the six station facilities is approximately \$9.3M (FY2007\$) dollars, a savings of roughly 4% of the original project cost. Because the supporting information on land and parking cost estimates was incomplete, the project team reallocated the costs by station using available acreage data. A more detailed evaluation of station areas, parking requirements and valuation of land costs should be undertaken in a later study. When the costs for land and parking were removed for the six stations, the project savings from station consolidation totaled approximately \$28M (FY2007\$), a savings of roughly 10% of the original project cost. Including the costs for the MMPT and vehicles, the project with seven stations would cost an estimated \$365M (FY2007\$). Assuming an annual inflation rate of 3% between 2007 and 2010, the FY2010 project estimate would be approximately \$399M. The estimated construction cost in year-of-expenditure (YOE) dollars would depend on the schedule set forth in the project implementation plan.

## Project O&M Cost Assumptions

The operating assumptions from the 2001 Environmental Assessment were used as a baseline for this study, with four trains operating between Griffin and Atlanta and two additional trains operating between Macon and Atlanta during peak periods. The Environmental Assessment assumed that eight car trainsets would be used between Macon and Atlanta and either seven or eight car trainsets would be used between Griffin and Atlanta. The Macon to Atlanta Passenger Rail Study used a

more conservative estimate, based on recent Georgia Regional Transportation Authority (GRTA) operations planning work, of 4 car trainsets (one locomotive, two coach cars and one cab car per trainset).

GRTA developed a detailed operating and maintenance cost forecasting tool for the initial Griffin-to-Atlanta service that the project team adapted to forecast O&M costs for the Macon-to-Atlanta service. Costs were increased to 2010 dollars using a 3% inflation rate. A summary of the baseline (commuter rail) operating scenario's annual operating and maintenance costs are shown in Table 3 below. Note that this cost estimate did not include any bi-directional service.

**Table 3: Baseline Annual O&M Cost Estimate**

<b>Operating Segment</b>	<b>Total Trips*</b>	<b>O&amp;M Cost</b>
Griffin to Atlanta Service	4	\$11M
Macon to Atlanta Service	2	\$6M
<b>System Total</b>	<b>12</b>	<b>\$17M</b>

*\*Round trips*

The peak directional service (i.e. inbound AM trips and outbound PM trips), as proposed in the Environmental Assessment and re-evaluated in the RL Banks study, acts more as a “commuter” service than an “intercity” service. It does not provide a particularly effective option for travel between Macon and Atlanta other than for the purposes of an Atlanta-destined commute-to-work trip. To ascertain whether bi-directional service between Atlanta and Griffin or Atlanta and Macon is feasible, the project team developed a preliminary, sketch-level O&M cost estimate for a scenario where bi-directional service would be operated on the Macon and Atlanta and Griffin and Atlanta operating segments. These O&M cost estimates were based on unit costs previously developed by GRTA for their Griffin-to-Atlanta O&M cost estimate. The O&M cost estimate for bi-directional service for all trips would be approximately \$25M (FY2010 \$). A summary of the bi-directional (intercity rail) operating scenario's annual operating and maintenance costs are shown in Table 4 below.

**Table 4: Intercity Annual O&M Cost Estimate**

<b>Operating Segment</b>	<b>Total Trips*</b>	<b>O&amp;M Cost</b>
Griffin to Atlanta Service	8	\$16M
Macon to Atlanta Service	4	\$9M
<b>System Total</b>	<b>24</b>	<b>\$25M</b>

*\*Round trips*