

// A regular meeting of the Council of the City of Lynchburg was held on the 13th day of September, 2011, at 4:00 P.M. in the Council Chamber, City Hall, Ceasor T. Johnson, Vice-President, presiding. The following Members were present:

Present: Cary, Gillette, Helgeson, Johnson, Nelson, Perrow,

6

Absent: Foster

1

// Virginia Department of Transportation District Engineer Rob Cary gave a summary of the Route 29/460 Access Management Implementation. Mr. Cary stated that Phase I is complete which included the jug handle and the close of the crossovers. Several Council Members were concerned that there was no proper signage for Pleasant Valley Road and the possibility of restoring a right hand turn onto Tyreeanna Road.

Mr. Cary also gave an overview on Phase II which is under design for the proposed Odd Fellows Road Interchange at Route 29/460. Council Member Perrow stated that this is an excellent project on Odd Fellows Road. After further discussion from Council, it was suggested to schedule Mr. Cary for a future work session regarding the Tyreeanna Road issues.

// City Manager Kimball Payne gave a summary of the Parking Strategic Plan. Parking Authority Chair, Brandon Farmer and Vice Chair Ed Koepenick, along with Parking Manager Norman Hale, gave an overview on the progress of parking management in the central business district since endorsement of the Parking Strategic Plan in December of 2007. Background information was provided for discussion on the next steps in parking management. Several issues that will be considered are how to empower the Authority to address on-street parking along with its current responsibility for off-street parking while making the best use of off-street parking facilities. It was further stated because of misinformation, confusion, and concern that often accompany proposals related to parking management, it was felt that starting a conversation with City Council about the Parking Authority's progress and plans is an important step.

// Utilities Director Tim Mitchell gave an overview of Stormwater recommendations. Mr. Mitchell presented and asked for recommendations on level of service, funding and billing mechanisms, billing rate and credit program for consideration and approval by going forth with a public hearing. Several Council Members had concerns regarding compliance with the federal mandates and not to increase the taxes on the citizens to pay stormwater management fees and at this time not to proceed with a public hearing on this item.

After Council discussion, on motion of Council Member Nelson, seconded by Council Member Gillette, to hold a public hearing on the Stormwater Utility recommendations on October 25, 2011, Council by the following recorded vote approved to hold a public hearing on October 25, 2011 for the Stormwater Utility recommendations:

Ayes: Cary, Gillette, Johnson, Nelson

4

Noes: Helgeson, Perrow

2

Absent: Foster

1

// During roll call Council Member Perrow stated he would like to see if the mail could be distributed in a more timely manner due to the fact that several invitations that he received had already passed. Council Member Nelson acknowledged the great participation of our citizens during the National Night Out event throughout the different City neighborhoods, and also the wonderful dedication service at the Yoder Center in honor of the Aubrey Barbour Park.

// City Council recessed the meeting at 6:42 p.m.

// City Council reconvened the meeting at 7:30 p.m.

The following Members were present:

Present: Cary, Helgeson, Johnson, Nelson

4

Absent: Gillette, Perrow, Foster

3

Council Member Cary gave the Invocation, followed by the Pledge of Allegiance.

// Council Members Gillette and Perrow joined the meeting after the Invocation.

// Copies of the minutes of the August 9, 2011 meeting, having been previously furnished Council, reading was dispensed with, and on motion of Council Member Nelson, seconded by Council Member Cary, Council by the following recorded vote approved the minutes as amended:

Ayes: Cary, Gillette, Helgeson, Johnson, Nelson, Perrow

6

Noes:

0

Absent: Foster

1

// In the matter of Fire – General, Resolution #R-11-093 amending the FY 2012 City/Federal/State Aid Fund budget and appropriating \$23,000, fully reimbursable, to provide training and equipment for the Fire Department's Hazardous Materials team, laid over from the August 9, 2011 meeting, was again presented and read, and on motion of Council Member Nelson, seconded by Council Member Cary, Council by the following recorded vote adopted the Resolution:

Ayes: Cary, Gillette, Helgeson, Johnson, Nelson, Perrow

6

Noes:

0

Absent: Foster

1

// In the matter of Registrar, Resolution #R-11-095 amending the FY 2012 General Fund budget and appropriating \$13,929 with resources from the General Fund Reserve for Contingencies to provide supplemental funding to the Electoral Board/Registrar Office for estimated costs for the August 23, 2011, Republican Primary, laid over from the August 9, 2011 meeting, was again presented and read, and on motion of Council Member Nelson, seconded by Council Member Cary, Council by the following recorded vote adopted the Resolution:

Ayes: Cary, Gillette, Helgeson, Johnson, Nelson, Perrow

6

Noes:

0

Absent: Foster

1

// In the matter of Public Works – Water, City Council Report #8 was considered. On motion of Council Member Nelson seconded by Council Member Cary, Council by the following recorded vote introduced

and laid over to a later meeting for final action Resolution #R-11-096, as presented, amending the FY 2012 Water Capital Projects Fund budget and appropriating \$24,000, fully reimbursable, to reimburse costs associated with bringing the Pedlar Dam and Abert Lagoon Dam to minimum standards:

Ayes: Cary, Gillette, Helgeson, Johnson, Nelson, Perrow	6
Noes:	0
Absent: Foster	1

// In the matter of Police – Emergency Services, City Council Report #9 was considered. On motion of Council Member Nelson, seconded by Council Member Cary, Council by the following recorded vote introduced and laid over to a later meeting for final action Resolution #R-11-097, as presented, amending the FY 2012 City/Federal/State Aid Fund budget and appropriating \$120,000, fully reimbursable, to refresh the current Vesta Pallas 911 telephone system located in the Emergency Communications Center:

Ayes: Cary, Gillette, Helgeson, Johnson, Nelson, Perrow	6
Noes:	0
Absent: Foster	1

// In the matter of Community Planning - Zoning Amendments, a public hearing was held regarding City Council Report # 10 outlining the petition of the Lynchburg Humane Society to amend the Future Land Use Map (FLUM) from Resource Conservation and Medium Density Residential to Regional Commercial and to rezone approximately nine and six tenths (9.6) acres from R-2, Low-Medium Density Single-Family Residential District to B-5C, General Business District (Conditional) to allow the construction of an animal shelter and associated parking at 1211 Old Graves Mill Road. City Planner Tom Martin gave an overview of the request stating that the Planning Commission recommended approval of the FLUM and rezoning petitions.

Ms. Makena Yarbrough, Executive Director of the Lynchburg Humane Society, gave an outline of the request and asked for Council approval. Four individuals spoke in favor of the Lynchburg Humane Society. There was no one else present who wished to speak to this item, and the public hearing was closed. On motion of Council Member Gillette, seconded by Council Member Cary, Council by the following recorded vote adopted Ordinance #O-11-098, as presented, amending the Future Land use Map from Resource Conservation and Medium Density Residential to Regional Commercial use:

Ayes: Cary, Gillette, Helgeson, Johnson, Nelson, Perrow	6
Noes:	0
Absent: Foster	1

On motion of Council Member Nelson, seconded by Council Member Cary, Council by the following recorded vote adopted Ordinance #O-11-099, as presented, to rezone approximately nine and six tenths (9.6) acres from R-2, Low-Medium Density Single-Family Residential District to B-5C, General Business District (Conditional) to allow the construction of an animal shelter and associated parking at 1211 Old Graves Mill Road:

Ayes: Cary, Gillette, Helgeson, Johnson, Nelson, Perrow	6
Noes:	0
Absent: Foster	1

// In the matter of Finance – General, a public hearing was held regarding City Council Report #11 regarding a Resolution amending the FY 2012 Operating and Capital Budgets and appropriating funds to reflect the carry forward of unexpended funds in FY 2011. Director of Financial Services Donna Witt gave a summary of the FY 2011 Carry Forward. There was no one else present who wished to speak to this item, and the public hearing was closed. On motion of Council Member Cary, seconded by Council Member Gillette, Council by the following recorded vote adopted Resolution #R-11-100, as presented, amending the FY 2012 Operating and Capital Budgets and appropriating funds to reflect the carry forward of unexpended funds in FY 2011:

Ayes: Cary, Gillette, Helgeson, Johnson, Nelson, Perrow	6
Noes:	0
Absent: Foster	1

// In the matter of City Council, Ms. Barbara Petit was not present at this meeting.

// In the matter of City Council, Ms. Leecy Fink spoke before Council regarding the parking situation downtown.

// In the matter of City Council, Mr. Andrew Schools spoke before Council regarding the parking situation downtown.

// In the matter of City Council, Ms. Tara Cofer spoke before Council regarding the parking situation downtown.

// In the matter of City Council, Mr. Andrew W. Childress spoke before Council regarding the parking situation downtown.

// In the matter of Public Works – Utilities, City Council Report #16 was considered. On motion of Council Member Perrow, seconded by Council Member Gillette, Council by the following recorded vote introduced and laid over to a later meeting for final action Resolution #R-11-101, as presented, amending the FY 2012 Fleet Fund Budget and appropriating \$691,437, to purchase a replacement vacuum/jetter truck along with two replacement television inspection trucks destroyed in a recent fire:

Ayes: Cary, Gillette, Helgeson, Johnson, Nelson, Perrow	6
Noes:	0
Absent: Foster	1

// In the matter of City Code/Police - General, City Council Report #17 was considered. On motion of Council Member Perrow, seconded by Council Member Cary, Council by the following recorded vote adopted Ordinance #0-11-102, as amended, amending the City Code relating to the recovery of expenses incurred with responding to DUI and related incidents:

Ayes: Cary, Gillette, Helgeson, Johnson, Nelson, Perrow	6
Noes:	0
Absent: Foster	1

// The meeting was adjourned at 8:52 P.M.

LYNCHBURG CITY COUNCIL

Agenda Item Summary

MEETING DATE: **September 27, 2011**

AGENDA ITEM NO.: 1

CONSENT:

REGULAR:

WORK SESSION: **X**

CLOSED SESSION:

(Confidential)

ACTION: **X**

INFORMATION:

ITEM TITLE: **Agreement for Services with the Lynchburg Neighborhood Development Foundation**

RECOMMENDATION: Adopt a resolution to amend the FY 2012 Adopted Budget and appropriate \$25,000 with resources from the Reserve for General Fund Contingencies to fund the attached agreement with the Lynchburg Neighborhood Development Foundation (LNDF).

SUMMARY: Since 1999, the City of Lynchburg has had a contractual relationship with LNDF to provide consultative services in the areas of affordable housing development and financing, community development financing, and neighborhood development. Council deferred continued funding under the 1999 agreement during its consideration of the FY 2012 Adopted Budget pending further information regarding the services provided by LNDF.

LNDF has provided a conduit for the City in meeting the housing goals outlined in the Council adopted 2010 Consolidated Plan required by the Department of Housing and Urban Development. These goals include:

1. Increase the number of owner occupied units;
2. Rehabilitate substandard housing units. Emphasis is to be placed on programs that require an investment of funds and/or labor on the part of the owner commensurate with the owner's resources;
3. Support initiatives to increase permanent affordable rental and housing ownership opportunities;
4. Support programs that assist individuals in retaining their homes in challenging economic times.

LNDF is the convener of the Lynchburg Housing Partners, a group of non-governmental organizations (NGO) that facilitate the provision of affordable housing for citizens. Most recently, LNDF, on behalf of the City, facilitated a \$5,000 grant award from Housing Virginia to fund the first City-wide "Lynchburg is Listening: A Housing Conversation" to be held on Monday, October 10, 2011.

LNDF provides the City with services and relationships and capacity that does not exist internally. Examples of LNDF work product under the 1999 agreement are attached. This outsourcing of services helps ensure that the City is meeting the housing goals adopted by City Council as part of the HUD mandated 2010 Consolidated Plan and furthers the goals outlined in the Neighborhoods & Housing chapter of the *Comprehensive Plan 2002-2020*.

In order to memorialize the relationship between LNDF and the City the attached agreement has been prepared. This is similar to the agreement in place since 1999. At that time, Council considered the agreement to be a contract.

Contract approval and funding under a contract can be approved by a simple majority of Council (4 affirmative votes).

If Council does not wish to enter into a new contractual arrangement with LNDF but still wishes to consider funding LNDF activities, approval of the appropriation would require a supermajority (5 affirmative votes).

PRIOR ACTION(S): Annual funding of agreement for services with LNDF in the amount of \$25,000 since 1999. (FY 2011 funding was in the amount of \$16,247 due to extenuating circumstances.)

FISCAL IMPACT: \$25,000 appropriation from the Reserve for General Fund Contingencies

CONTACT(S): Bonnie Svrcek, Deputy City Manager, 455-3987

ATTACHMENT(S): Examples of LNDF Work Product; Proposed Agreement between LNDF and the City of Lynchburg; Proposed Resolution

REVIEWED BY: lkp

Attachment

Examples of LNDF Work Product (as stated in prior agreement with the City)

The following are examples of activity undertaken by LNDF according to the 1999 agreement:

LNDF has worked with the City in a variety of activities to include: assisting with the development of the Consolidated Plans for 1995, 2000, 2005, and 2010; coordinating partners and operating a successful Lead Hazard Control program from 1998 – 2004; contributing to the creation and development of neighborhood-based projects and programs such as Weed & Seed, and other neighborhood development activities; convening housing providers for specific housing-related projects; implementing the development and transfer of publicly-owned blighted properties to private control and productive use through multi-family, single-family, and community development real estate projects; and

LNDF has served the City by providing other unique services such as:

- Identifying/developing access to new and useful community development financing programs and tools such as new market tax credits and Neighborhood Stabilization Program as well as innovative techniques for using existing resources; bringing intermediaries and their financing programs to Lynchburg – including Local Initiatives Support Corporation (LISC), the National Equity Fund (NEF) and Virginia Community Development Corporation (VCDC);
- Assisting and supporting the City's Community Development Department plans and priorities such as revitalization of the Fifth St. corridor, Tinbridge Hill and the residential neighborhoods surrounding the downtown. Working with the City on housing planning and other community development policy issues – e.g. The current housing study supported by the Housing VA grant;
- Providing technical assistance and support at no cost to organizations attempting to launch community development projects or planning efforts – Virginia University of Lynchburg (Historic Black College and University program- HBCU), the Warehouse Arts project (Green Street), Lynchburg College neighborhood-building efforts, giving opportunities to area students to engage in community planning efforts;
- Providing access to multiple resources, both human and financial for the purpose of building relationships with necessary institutions, agencies and individuals, thereby furthering City housing and community development goals.

AGREEMENT

This AGREEMENT made and dated this 27th day of September 2011, by and between the City of Lynchburg, a municipal corporation of the Commonwealth of Virginia, hereinafter referred to as the “City,” and the Lynchburg Neighborhood Development Foundation, Inc., a Virginia corporation, hereinafter referred to as “LNDF.”

WHEREAS, LNDF is dedicated to promoting and creating affordable housing and community development within the City and has developed expertise in real estate development and finance; and

WHEREAS, the City has identified unique services and activities that LNDF can provide in the fields of real estate development, equity investment financing, and access to public and private professional expertise and services essential to advancing/implementing the goals and objectives envisioned in several community development planning efforts, including but not limited to the Comprehensive Plan, the 2010 Consolidated Plan, various neighborhood plans and efforts, and,

WHEREAS, the City and its citizens receive value from LNDF’s relationships, expertise and activities as stated in a prior Agreement documenting the relationship between LNDF and the City, dated July 1, 1999; and,

WHEREAS, the City and LNDF intend to create this new agreement to reflect current and future activities and services.

NOW, THEREFORE for and in consideration of the mutual covenants and conditions contained herein, the City and LNDF agree and covenant as follows:

Services by LNDF

Annually, starting with the fiscal year 2011-2012, LNDF agrees to provide the following services and activities within the City:

(1) LNDF will provide consultative services to both public and private sector persons, groups and agencies, providing expertise in the area of affordable housing development and financing, real estate development, and community development financing as well as the establishment of limited liability entities. LNDF will continue to assist in the development of a housing forum in which housing and community development needs will be identified and the appropriate resources will be sought to address identified needs.

(2) LNDF will continue its efforts to attract resources into the City, through existing and new partnerships with persons and institutions throughout the Commonwealth in order to advance the housing and community development goals of the City. In this activity, LNDF will provide access to real estate development and financing resources, professionals, and strategies in the public and private sectors.

(3) LNDF will continue to form and facilitate collaborative projects comprised of the various non-profit organizations serving housing and neighborhood services within the City. In this activity, LNDF will continue to convene the Lynchburg Housing Partners and co-convene the Central Virginia Homeless and Housing Coalition.

(4) LNDF will continue to act as liaison and partner with the City and its departments in the development of plans and strategies intended to build the assets of the City's many and distinct neighborhoods. In this activity, LNDF will continue its work with the Tinbridge Hill Sustainable Neighborhood pilot program and with the Fifth St. Community Development Corporation for long-term revitalization.

(5) LNDF will engage in such other services and activities that are requested in order to assist in the development of safe and affordable housing and improving neighborhood conditions within the City (see attachment) and in such manner as to further and to implement the City's Comprehensive Plan, the Consolidated Plan, and the vision articulated in the Sustainable City Initiative.

(6) LNDF will provide a resort of services rendered at least twice a year to the City Manager.

Payment by City

In order to assist LNDF in providing the services and activities described above the City agrees to pay a fee in the amount of \$25,000 each year for three years.

Term of Agreement

This agreement shall be for the term of three years, beginning July 1, 2011, and ending June 30, 2014, renewable upon successful performance and acceptance of written reports and such conditions as are mutually agreeable to the City and LNDF. Renewal of this agreement is contingent upon the appropriation of funds by the City Council.

WITNESS the following signatures and seals all as of the day and year first above written.

City of Lynchburg

By _____
City Manager

Lynchburg Neighborhood Development
Foundation

By _____

Attachment

Examples of LNDF Work Product (as stated in prior agreement with the City)

The following are examples of activity undertaken by LNDF according to the 1999 agreement:

LNDF has worked with the City in a variety of activities to include: assisting with the development of the Consolidated Plans for 1995, 2000, 2005, and 2010; coordinating partners and operating a successful Lead Hazard Control program from 1998 – 2004; contributing to the creation and development of neighborhood-based projects and programs such as Weed & Seed, and other neighborhood development activities; convening housing providers for specific housing-related projects; implementing the development and transfer of publicly-owned blighted properties to private control and productive use through multi-family, single-family, and community development real estate projects; and

LNDF has served the City by providing other unique services such as:

- Identifying/developing access to new and useful community development financing programs and tools such as new market tax credits and Neighborhood Stabilization Program as well as innovative techniques for using existing resources; bringing intermediaries and their financing programs to Lynchburg – including Local Initiatives Support Corporation (LISC), the National Equity Fund (NEF) and Virginia Community Development Corporation (VCDC);
- Assisting and supporting the City's Community Development Department plans and priorities such as revitalization of the Fifth St. corridor, Tinbridge Hill and the residential neighborhoods surrounding the downtown. Working with the City on housing planning and other community development policy issues – e.g. The current housing study supported by the Housing VA grant;
- Providing technical assistance and support at no cost to organizations attempting to launch community development projects or planning efforts – Virginia University of Lynchburg (Historic Black College and University program- HBCU), the Warehouse Arts project (Green Street), Lynchburg College neighborhood-building efforts, giving opportunities to area students to engage in community planning efforts;
- Providing access to multiple resources, both human and financial for the purpose of building relationships with necessary institutions, agencies and individuals, thereby furthering City housing and community development goals.

Resolution:

BE IT RESOLVED That the FY 2012 General Fund budget is amended and \$25,000 is appropriated with resources from the General Fund Reserve for Contingencies to the Lynchburg Neighborhood Development Foundation.

Introduced:

Adopted:

Certified:

Clerk of Council

141L

LYNCHBURG CITY COUNCIL

Agenda Item Summary

MEETING DATE: **September 27, 2011**

AGENDA ITEM NO.: 2

CONSENT:

REGULAR:

WORK SESSION: **X**

CLOSED SESSION:

(Confidential)

ACTION: **X**

INFORMATION:

ITEM TITLE: **Support for Future Regional Air Shows**

RECOMMENDATION: Adopt the attached resolution of support for future regional air shows.

SUMMARY: The attached memorandum provides background information.

In summary, Lynchburg Regional Airshow, Inc. would like for the region to host future air shows featuring military flight demonstration teams. A small group has been meeting to address a number of issues arising out of last May's show. It is now believed that, with the exception of some close-out items from the recent airshow, the region is in a position to move forward with an air show in 2013, pending approval by the Campbell County Board of Supervisors and Lynchburg City Council.

Lynchburg Regional Airshow, Inc. has submitted an application for a military flight demonstration team to participate in an air show in 2013, on a date to be determined. It is expected that notification of a decision on that application will come by December. In order for the region to further consider hosting an air show in 2013, it was agreed that questions of air show governance, management and coordination needed to be resolved, and the support of the governing bodies obtained by October.

The attached memorandum has been shared with the Lynchburg Regional Airport Commission and no members have expressed any concerns.

The Campbell County Board of Supervisors will be asked to indicate its support for future air shows on October 4th.

PRIOR ACTION(S): February 22, 2011, Council authorized the application for a permit from Campbell County to have an airshow at Lynchburg Regional Airport.

FISCAL IMPACT: Undetermined.

CONTACT(S): Kimball Payne, 455-3990; Mark Courtney, 455-6089

ATTACHMENT(S): September 19, 1011 memorandum on Future Regional Air Shows

REVIEWED BY: lkp

RESOLUTION:

WHEREAS regional air shows can be beneficial in terms of providing educational opportunities for area youth, recruitment opportunities for our armed forces, traditional entertainment and recreational value for the region at large, and related business activity and tax revenue benefits, and

WHEREAS a successful regional air show requires a partnership between the public, private and non-profit sectors, with support from various businesses, agencies, institutions, and individuals,

NOW, THEREFORE, BE IT RESOLVED THAT the Lynchburg City Council does hereby express its support for future air shows in Region 2000 through a partnership between Campbell County, the City of Lynchburg and Lynchburg Regional Airshow, Inc.,

AND FURTHERMORE, does express its understanding of the conditions for future regional airshows as including the following:

- 1) Regional air shows will be hosted on a periodic basis based on the availability of military flight demonstration teams, the availability of partner organizations to provide the resources necessary to support these events, and general support from the region to attend and participate in such events;
- 2) Planning will commence for an event in 2013 subject to the availability of a military flight demonstration team;
- 3) The creation of a Region 2000 Air Show Coordinating Committee with membership and involvement as noted in a memorandum on Future Regional Air Shows dated September 19, 2011;
- 4) Continued partnership with Lynchburg Regional Air Show, Inc. that would be responsible for the areas noted in the memorandum;
- 5) The completion of items related to the close out of the successful 2011 Air Show including the after action review and a financial accounting;
- 6) The identification of funding for the construction of permanent infrastructure, i.e. arresting gear installation, to support future air shows;
- 7) The support of the Campbell County Board of Supervisors and the Lynchburg Regional Airport Commission.

AND FURTHERMORE, the Lynchburg City Council does hereby authorize the utilization of public sector resources as in-kind contributions for general air show planning responsibilities with other direct expenses to be paid for by Lynchburg Regional Airshow, Inc. from the revenues generated by the air shows and specific taxes or fees generated from air show activities as may be authorized by City Council or the Campbell County Board of Supervisors.

Adopted:

Certified:

Clerk of Council

MEMORANDUM

To: Campbell County Board of Supervisors
Lynchburg City Council
Lynchburg Regional Airport Commission
Lynchburg Regional Air Show, Inc. Board of Directors

From: Mark Courtney, Lynchburg Regional Airport Director
Charles Falwell, Campbell County Board of Supervisors Member
Joan Foster, Mayor, Lynchburg City Council
R. David Laurell, Campbell County Administrator
L. Kimball Payne, Lynchburg City Manager
Winfred Nash, Chairman, Lynchburg Regional Air Show, Inc. Board
Jones Stanley, Lynchburg Regional Air Show, Inc. President

Subject: Future Regional Air Shows

Date: September 19, 2011

BACKGROUND:

In the fall of 2010, the Lynchburg Regional Airport Commission formed an exploratory committee comprised of a local group of aviation enthusiasts to investigate the possibility of an air show at Lynchburg Regional Airport. With the subsequent consent of Lynchburg City Council and the Campbell County Board of Supervisors the committee proposed the possibility of initially holding a “propeller” air show during 2011, followed by a major air show with a military flight demonstration team in 2012. Due to a scheduling conflict, the Navy’s Blue Angels offered to come to Lynchburg Regional Airport for a show in May of 2011. Through a great deal of work on the part of many people a successful, major air show was held at the airport over the weekend of May 21st and 22nd with only four months of preparation time. This was the first time in nearly 30 years that a major air show had been put on in the area. The Lynchburg Regional Air Show, Inc. was established as a 501 (c)(3) non-profit organization to manage the air show and work with the City and County on related issues. The air show was successful in terms of both performances and attendance. The show had an estimated attendance of 32,000 plus onsite spectators over the two-day event that not only paid for the direct costs of the show, but also provided funds for a \$25,000 contribution to Centra Health through the Children’s Miracle Network, \$75,000 in seed funds for a future air show, and funds for the development of an aviation museum at Lynchburg Regional Airport.

DISCUSSION:

As with any major event a debriefing and discussion on future options was held on July 22nd. Three primary areas of discussion occurred including the potential for future air shows, public safety, and spectator management. It was acknowledged that while the show was a success, there were a number of issues that arose during the event that need to be addressed if future shows are to be conducted. Many of these issues were the direct result of the short planning timeframe due to the unexpected availability of the Blue Angels. Of core importance going forward is whether or not the community at large is interested in supporting a major air show in the region from time-to-time, and if so, what is the optimal schedule for the region to maintain interest and participation. Based on the conversation, it was the consensus of the group that regional air shows would be beneficial in terms of providing educational opportunities for area youth, recruitment opportunities for our armed forces, traditional entertainment and recreational value for the region at large, and related business activity and tax revenue benefits.

Two lessons learned from the short planning window are - 1) There needs to be a more coordinated and collaborative approach to the air show by regional partners with more direct oversight and involvement with certain functions, and 2) More adequate preparation, planning and training is needed to effectively manage an event of this size. Planning for the event should have the same level of importance as having the event based on availability of a flight demonstration team. In other words, the availability of a military flight demonstration team should not be the sole determinant; the ability and time to adequately plan for an air show is also critical to a decision to host an air show.

The planning and execution of the event required a great deal of private and public resources. Many of the expenses associated with the show were paid for through ticket sales, concession revenue, and sponsorships. It is estimated that in addition to the in-kind costs for various private entities involved in the show, the City of Lynchburg and Campbell County invested over \$75,000 in unreimbursed staff time and other resources.

Three questions need to be answered to determine the best way to proceed going forward. The first is whether or not there is agreement that an air show from time-to-time is in the best interest of the region? If the answer is no then the remainder of this discussion becomes moot. If the answer is yes, then what is the best coordinating structure to make this work over the long run? The second question is whether or not the public sector is willing to commit to continue providing in-kind support for future air shows? If not, then all costs for the show would need to be covered by air show revenues that include concessions, ticket sales, sponsorships, etc., and then viability for future shows would be based accordingly. The third question is how often would an air show in the region be expected to succeed?

The group discussed the first question and determined that if future air shows are supported by the community it is recommended that a more formalized partnership between the private air show sponsors and the public sector, Campbell County and the City of Lynchburg, be established. Generally two options exist. The first is to have a

collaborative approach with representatives of the primary parties to form a coordinating committee, the Region 2000 Air Show Coordinating Committee, which would help coordinate and support the overall air show planning and execution among the principal responsible parties. The second would be for the existing Lynchburg Regional Air Show, Inc. to assume full responsibility for the show with support from the City and County as with this most recent event. In other words it would be a LRA event with permitting and support provided by the public sector. After considerable discussion it was the recommendation of the group that in order to have long-term support for a community based event a Coordinating Committee comprised of the primary partners would be the best way to proceed and develop a more collaborative approach to the air show. It provides for longer term continuity, still provides for a non-profit to take the lead with air show operations and charitable activities, and involves the partners in the decision-making process in a collaborative and comprehensive fashion. Please find attached an outline of how this relationship would operate.

The Coordinating Committee would be comprised of eight members - two representatives each from the Lynchburg Regional Air Show, Inc., the City of Lynchburg, and Campbell County, plus the Lynchburg Regional Airport Director and Air Show Director. The City and County representatives would be the City Manager and County Administrator, or their designee, and another person from each locality appointed by the City Manager and County Administrator.

The Coordinating Committee would have no legal standing or authority. The Committee would help coordinate and facilitate activities between LRA, Inc., the City, the County and other public sector agencies. The Committee would also make general recommendations to LRA, including scheduling and staffing, provide concurrence on air show dates, review budgets and after action reports, and help with coordinating permitting, public safety, and airport operations and facilities. The City and County would maintain their respective responsibilities for permitting, public safety, and the use of public assets, including airport facilities and on-site parking, which is the responsibility of the Airport Director. A separate airport use agreement would be executed between the Lynchburg Regional Air Show, Inc. and the City with terms and conditions for use of airport facilities as established by the City. Campbell County would provide overall public safety coordination and management.

The Lynchburg Regional Air Show, Inc.'s responsibility would then allow it to be more focused on air show operations and support that would include responsibility for air show aeronautical performances and ground displays, off-site parking, spectator hospitality, concessions, marketing, ticketing, sponsorships, funding, volunteer coordination and other activities related to the event. As a non-profit it could continue to act as the vehicle for charitable contributions determined to be in the best interest of the overall air show activities. Lynchburg Regional Air Show, Inc. would also be the funding mechanism for costs incurred for City, County, and other resources and vendors used to provide support to the show.

Public information, traffic management, and spectator transportation and management would be joint efforts since they involve all three primary entities as was the case with the past air show. The air show director would work with the Lynchburg Regional Air Show, Inc. on a day-to-day basis and also work regularly with the Coordinating Committee and Public Safety and Airport representatives to help manage and carry out their respective responsibilities and to ensure the appropriate support is provided for a successful air show.

The group also discussed the second issue related to in-kind public sector support and is recommending that the City of Lynchburg and Campbell County continue to provide general planning and policy support, however all direct costs for staff time and support functions outside of these areas would be paid for by the revenues generated from the event. This is consistent with other activities currently supported by City, County and state resources. Reimbursable services include costs for buses, EMS, fire, law enforcement, transportation support, public works, and use of the airport facility. The City and County will work toward reducing the overall costs when practical and also take into consideration revenues generated from the air show that could go toward supporting operations. If entities such as the State Police and or VDOT will provide services to the City and County for a local government event at no cost then that approach will also be used as much as possible.

The group discussed the issue of frequency of air shows and wanted to get additional input from others before coming to any conclusions. There was general agreement around several issues. Everyone agreed that in order to have a successful, economically viable air show it would require the participation of one of the major military flight demonstration teams. Availability of one of the teams would drive in large part when shows could occur. Beyond that it was discussed that the region and planning infrastructure could not support a major air show every year; possibly every two to five years would be reasonable. A decision date by mid-October is approaching as to whether or not the region should plan for accepting an offer for another flight demonstration team in 2013 if that possibility becomes available later this year. If a decision to opt in for consideration is not made during October of this year the planning window narrows and the next event would most likely not be planned until 2014 if a flight demonstration team was available at that time.

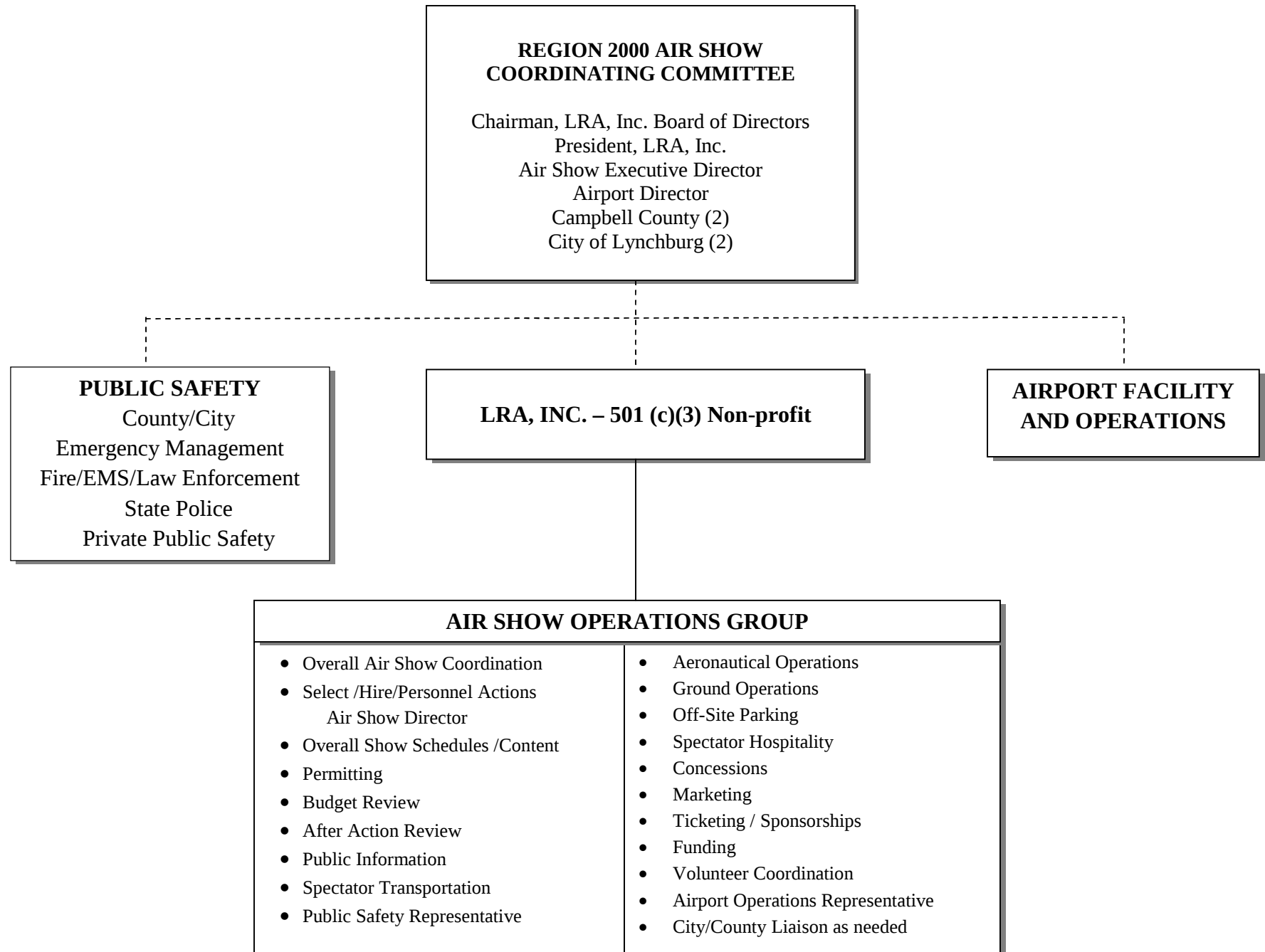
RECOMMENDATION:

It is the recommendation of the individuals listed above to obtain concurrence from the Campbell County Board of Supervisors, Lynchburg City Council, Lynchburg Regional Airport Commission, and Lynchburg Regional Air Show, Inc. to do the following:

- 1) Continue to have regional air shows on a periodic basis based on availability of military flight demonstration teams, availability of partner organizations to provide the resources necessary to support these events, and general support from the region to attend and participate in such events;

- 2) Support planning for an event in 2013 subject to availability of a military flight demonstration team;
- 3) Support the creation of the Region 2000 Air Show Coordinating Committee with the membership and involvement as noted;
- 4) Authorize the continued partnership with Lynchburg Regional Air Show, Inc. that would be responsible for the areas noted;
- 5) Authorize the utilization of public sector resources as in-kind contributions for general planning responsibilities with other direct expenses to be paid for by LRA, Inc. from the revenues generated off the air show and specific taxes or fees generated from the air show activities as may be authorized by City Council or the County Board of Supervisors.

Attachment: Relationship Outline Chart



9/15/2011

Clerk of Council

900 Church St

Lynchburg, Va. 24504

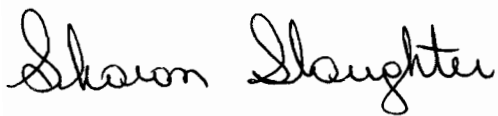
RE: GLTC Funding Request

Ms. Valerie Chambers:

I am requesting to speak on behalf of the funding request that is on the agenda for September 27, 2011.

Respectfully,

Sharon Slaughter



2075 Langhorne Rd. Apt 20

Lynchburg, Va. 24501

RECEIVED
SEP 16 2011
Council/Manager
Offices

LYNCHBURG CITY COUNCIL

Agenda Item Summary

MEETING DATE: **September 27, 2011**

AGENDA ITEM NO.: 11

CONSENT:

REGULAR: **X**

WORK SESSION:

CLOSED SESSION:

(Confidential)

ACTION: **X**

INFORMATION:

ITEM TITLE: **FY 2012 Supplemental Funding Request for the Greater Lynchburg Transit Company**

RECOMMENDATION: Adopt a resolution to amend the FY 2012 General Fund budget and appropriate \$100,000 with resources from the FY 2012 General Fund Reserve for Contingencies to prevent further reductions in services provided by the Greater Lynchburg Transit Company (GLTC).

SUMMARY: There are two issues facing the City related to GLTC's finances: a projected deficit in the FY 2012 Budget, and how to deal with GLTC's cumulative deficit which indicates an ongoing structural imbalance in its operating budget. This matter is on Council's agenda as a result of a request from the GLTC Board for assistance in addressing the first, more immediate matter of the projected FY 2012 shortfall.

After the approval of GLTC's FY 2012 Operating Budget of \$7,049,104, with a City Share of \$1,143,714, GLTC learned it would receive less federal and State aid than budgeted. GLTC also updated some expenses, particularly fuel, to reflect the most current information. As a result of these actions, GLTC's projected FY 2012 operating budget is now projected to have a shortfall of \$374,447 unless action is taken.

In the larger context, GLTC ended FY 2010 with a deficit of \$153,780 and ended FY 2011 with a deficit of \$352,716, resulting in a cumulative deficit, as reported in their most recent audit, of \$506,496. GLTC has been funding its deficits through a combination of additional funds from the City and a commercial line of credit. As of June 30, 2011, GLTC owed \$377,166 on its line of credit.

To address these issues, the GLTC Board of Directors directed staff to present options to balance the FY 2012 Budget and to begin to pay down the commercial line of credit by \$50,000 in FY 2012. The decision to pay down the line of credit, added to the projected operating shortfall, would result in a projected end of FY 2012 deficit of \$424,447. Without action to address this situation, the cumulative GLTC deficit at the end of FY 2012 could be \$930,973. Clearly, this is not sustainable.

After holding two public hearings, at which many customers urged GLTC to minimize any service reductions even if it required a fare increase, the Board, at its August 31 meeting, directed staff to take the following steps to balance the FY 2012 budget:

- Increase fares by 33%, with an estimated revenue increase of \$122,922
- Cut Administrative/Support staff and programs, saving \$125,415
- Reduce Night Service by 1 hour, saving \$76,110
- Seek additional City operating funds, totaling \$100,000

If the City is unable to fund the request, GLTC will make additional cuts in service, including a combination of weekday and night service or Sunday service reductions.

GLTC notes that transit funding should be viewed as an investment, as demonstrated in a recent economic impact study which determined that GLTC's local benefit to funding cost is 7.6 to 1. A copy of that study is attached for reference. Nevertheless, this investment needs to have sustainable operating funding in order to maintain a desirable or acceptable level of service to the community.

PRIOR ACTION(S): September 27, 2011 Finance Committee; GLTC Informational Memo to Council on August 8, 2011

FISCAL IMPACT: A one-time payment of \$100,000 is needed from the FY 2012 General Fund Reserve for Contingencies to balance the FY 2012 budget. There needs to be a discussion on how to resolve GLTC's ongoing shortfalls and cumulative deficit within the context of service expectations and available resources.

CONTACT(S): Michael J. Carroll, General Manager of GLTC, 455-5084

ATTACHMENT(S): Resolution; "The Economic Impact of the Greater Lynchburg Transit Company on the Lynchburg, Virginia Region" Jack Faucett Associates, Inc., February 15, 2010 – Fact Sheet and Full Report

REVIEWED BY: lkp

RESOLUTION:

BE IT RESOLVED that the FY 2012 General Fund budget is amended and \$100,000 is appropriated with resources from the FY 2012 General Fund Reserve for Contingencies to prevent further reductions in services provided by the Greater Lynchburg Transit Company (GLTC).

Introduced:

Adopted:

Certified:

Clerk of Council

The Economic Impact of the Greater Lynchburg Transit Company on the Lynchburg, Virginia Region

Prepared for:

The Greater Lynchburg Transit Company

Prepared by:

Jack Faucett Associates, Inc.

Economics

Public Policy

Planning

**Jack
Faucett
Associates**



KFG Group, Inc.



February 15, 2010

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Acknowledgements

Jack Faucett Associates, Inc. and KFH Group, Inc. acknowledge and appreciate the kind support of the staff of the Greater Lynchburg Transit Company (GLTC) during this research effort. In particular, we would like to thank Michael Carroll, Scott Willis, and Gloria Berkley for answering numerous questions and requests for information. We would also like to thank GLTC's radio dispatchers and bus drivers who completed an employee survey and helped administer an onboard bus rider survey.

The primary authors of this study are Jonathan Skolnik and Rami Chami at Jack Faucett Associates, Inc. Sue Knapp and Jill Chen at KFH Group, Inc. were instrumental in developing, administering, and analyzing the results of the employee and bus rider surveys. They also drafted sections of the report.

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Executive Summary

The primary purpose of this study is to estimate the annual economic impacts of the Greater Lynchburg Transit Company (GLTC) on the Lynchburg region from a local perspective. The Lynchburg region is defined as the GLTC service area. GLTC is a publicly-owned, non-profit company that provides public transportation service in the City of Lynchburg, Virginia and the adjacent community of Madison Heights in Amherst County, Virginia. GLTC provides fixed route transit service, open to the general public, and paratransit service for persons with disabilities. GLTC also operates, under the name LU Transit, several fixed routes that serve Liberty University (LU). The population of the transit service area is about 80,000 people. The local economic impacts of GLTC were measured against a theoretical scenario in which transit in Lynchburg no longer exists. The economic impacts that were measured include:

- Avoided costs for transit users switching to alternative transportation modes
- Avoided economic and social costs of trips that would be cancelled
- Avoided externalities such as accidents, air pollution, and congestion
- Lost GLTC employee compensation
- Lost GLTC operating and capital purchases
- Lost operating funds for transit

Annual Impacts of GLTC

- GLTC facilitates economic activity valued at \$27 million
- GLTC directly employs 112 employees and indirectly supports an additional 289 full time equivalent jobs in the local economy
- The average GLTC bus rider that is not transit dependent would be willing to pay \$59 annually to maintain transit as a local transportation option
- About 70 percent of all city fixed route and paratransit bus riders said their personal independence would decrease in the absence of transit

Annual Benefits and Costs of GLTC

The primary cost associated with operating GLTC from a local perspective is the funding provided by the City of Lynchburg and Amherst County. However, GLTC's benefits are significantly larger than the costs local governments pay to fund the transit system. GLTC provides about \$9.0 million in benefits to the Lynchburg region. The City of Lynchburg and Amherst County provide GLTC with about \$1.1 million and \$53 thousand in funding per year respectively. The ratio of GLTC's benefits to costs is 7.6 to 1, which means that almost every dollar spent by local government on the GLTC system returns \$7.60 dollars in benefits to the local community.

Chapter 1: Introduction

The regulatory environment created by the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA); Transportation Equity Act for the 21st Century (TEA21); Safe, Accountable, Flexible, Efficient Transportation Equity Act (SAFETEA-LU); Clean Air Act (CAA); Americans with Disabilities Act (ADA); and the current economic climate, have facilitated the need for transit operators to redefine themselves as an economic asset and resource. ISTEA and subsequent acts established a new outlook on the transportation planning process. These forces have created the need to identify the expected outcomes of transit investments relative to other transportation investment opportunities. ISTEA also recognizes that transportation investment decisions can have a dramatic effect on local communities and acknowledges the need for local regions to have more control over transportation investments in their areas. Key to this process is the need for measures of the economic impacts of transportation investments, including transit investments.

Elected officials make transit budget decisions, and local economic forces and local business leaders influence local elected officials. However, these decision makers often are not regular public transit riders and all too often transit is not viewed as an equal partner in economic development, but rather as a drain of public resources. Accordingly, it is important for regional transit operators to develop tools which can allow them to market themselves directly to political and business leaders.

With a difficult economic situation across the U.S., the growing costs of public transportation operations, and limitations upon the amounts of federal, state, and local funds available to offset annual operating deficits, local governments are at the point that they must carefully examine their commitments to transit services. Quantifying the benefits associated with the provision of public transit services is a particularly sensitive issue in smaller communities, such as the Lynchburg region, where transit's effects on reduced traffic congestion and air quality are of relatively lower consequence.

Transit systems are active participants in local economies. Marketing transit as an economic resource can influence elected officials and business leaders when the economic contributions of bus riders and transit operations are considered.

The Greater Lynchburg Transit Company

The Greater Lynchburg Transit Company (GLTC) is a publicly-owned, non-profit company that provides public transportation service in the City of Lynchburg, Virginia, as well as part of the adjacent community of Madison Heights. GLTC provides fixed route transit service, open to the general public, and paratransit service for qualifying persons with disabilities. GLTC also operates, under the name LU Transit, several fixed routes that serve Liberty University (LU). The service area includes about 80,000 people. The agency operates a fleet of 37 fixed route buses and 5 paratransit vehicles. GLTC receives funding from the City of Lynchburg, the Virginia Department of Rail and Public Transportation, the Federal Transit Administration, passenger fares, and other sources such as advertising revenue.

GLTC was awarded the American Public Transportation Association's 2009 Outstanding Transit System Award among agencies of its size. Virginia Governor Timothy Kaine praised GLTC as a model within the transit industry and a key actor in "ensur[ing] a greener, more sustainable transportation system in Virginia."¹

Lynchburg has a population of about 73,000 people, 21 percent of whom live below the poverty line. GLTC provides connections for these citizens to the attractions and services offered in the area, including four institutions of higher learning with combined enrollment of more than 25,000 students, elementary and high schools, Lynchburg General Hospital, Lynchburg Regional Airport, shopping, and public service institutions. GLTC fulfills a role in the City Comprehensive Plan to "provide the citizens of Lynchburg with a safe, efficient, and well-planned transportation system and facilities that enhance economic development and redevelopment opportunities."

Study Objective

The primary objective of this study is to estimate the annual economic impacts of the Greater Lynchburg Transit Company (GLTC) on the Lynchburg region from a local perspective. The Lynchburg region is defined as the GLTC service area. The economic impacts of GLTC were measured against a theoretical scenario in which transit in Lynchburg no longer exists. The economic impacts that were measured include:

- Avoided costs for transit users switching to alternative transportation modes
- Avoided economic and social costs of trips that would be cancelled
- Avoided externalities such as accidents, air pollution, and congestion
- Lost GLTC employee compensation
- Lost GLTC operating and capital purchases
- Lost operating funds for transit

Organization of the Report

The remainder of this report is divided into chapters. The following paragraphs introduce each of these chapters, providing a short description of the subject, contents, and purpose of each chapter.

Chapter Two provides a background on the GLTC system and the Lynchburg region. This background provides the reader with fundamental information that will aid the reader in understanding the analytical material presented in later chapters. The discussion of GLTC delves into the system's history, governance, budget, and services. The discussion of the Lynchburg region examines population and housing trends as well as economic factors such as the numbers of low-income residents, the major local industries and employers, and the other economic entities that generate transit trips.

¹ Source: LU Transit Services Website, <https://www.liberty.edu/index.cfm?PID=12354>. Also see an August 2009 press release from the Governor's office, <http://www.governor.virginia.gov/MediaRelations/NewsReleases/viewRelease.cfm?id=1049>.

Chapter Three provides a literature review of previous research on the economic impacts of transit.

Chapter Four provides an overview of the methodology for this study. The economic impact classification scheme and a description of the general methodologies used to estimate and describe the economic impacts are discussed. The purpose of this chapter is to provide the reader with the theoretical background necessary to understand the methodology and calculations chosen in the study.

Chapter Five provides an overview of the data collected as part of this study. The study team collected data on GLTC riders, GLTC employees, GLTC vendors, local social service agencies, and local employers. This included distribution of formal surveys to bus riders and GLTC employees. The purpose of the surveys was to ascertain how the absence of transit services would affect their economic behavior related to transportation, employment, and shopping choices. The purpose of this chapter is to explain, document, and validate the survey methodology.

Chapter Six provides the specific factors and data used to calculate the economic impacts. The chapter also includes various analyses of GLTC's impacts. The purpose of this chapter is to describe completely and clearly the data analysis so that the results of the study can be understood and replicated.

Chapter Seven provides an analysis of the economic impacts of transit and the benefits and costs of the transit system.

Chapter 2: Background on GLTC

GLTC was established in 1974 as a non-profit company owned by the City of Lynchburg, Virginia. Its mission is “to provide safe, dependable, affordable, accessible, and high quality public transportation to the Central Virginia community.”²

2.1 Administration and Services

A description of GLTC’s administration and services is provided below.

Administration

Policy decisions at GLTC are overseen by a volunteer Board of Directors, whose nine members are appointed by the Lynchburg City Council. The Board of Directors also selects a management company to oversee daily operations and implement Board decisions. First Transit Management Services is the current management company and provides the General Manager, Assistant General Manager, and other support roles to GLTC. Central Virginia Transit Management Company, a subsidiary of First Transit, employs the bus operators, mechanics, and other local staff that work at GLTC.

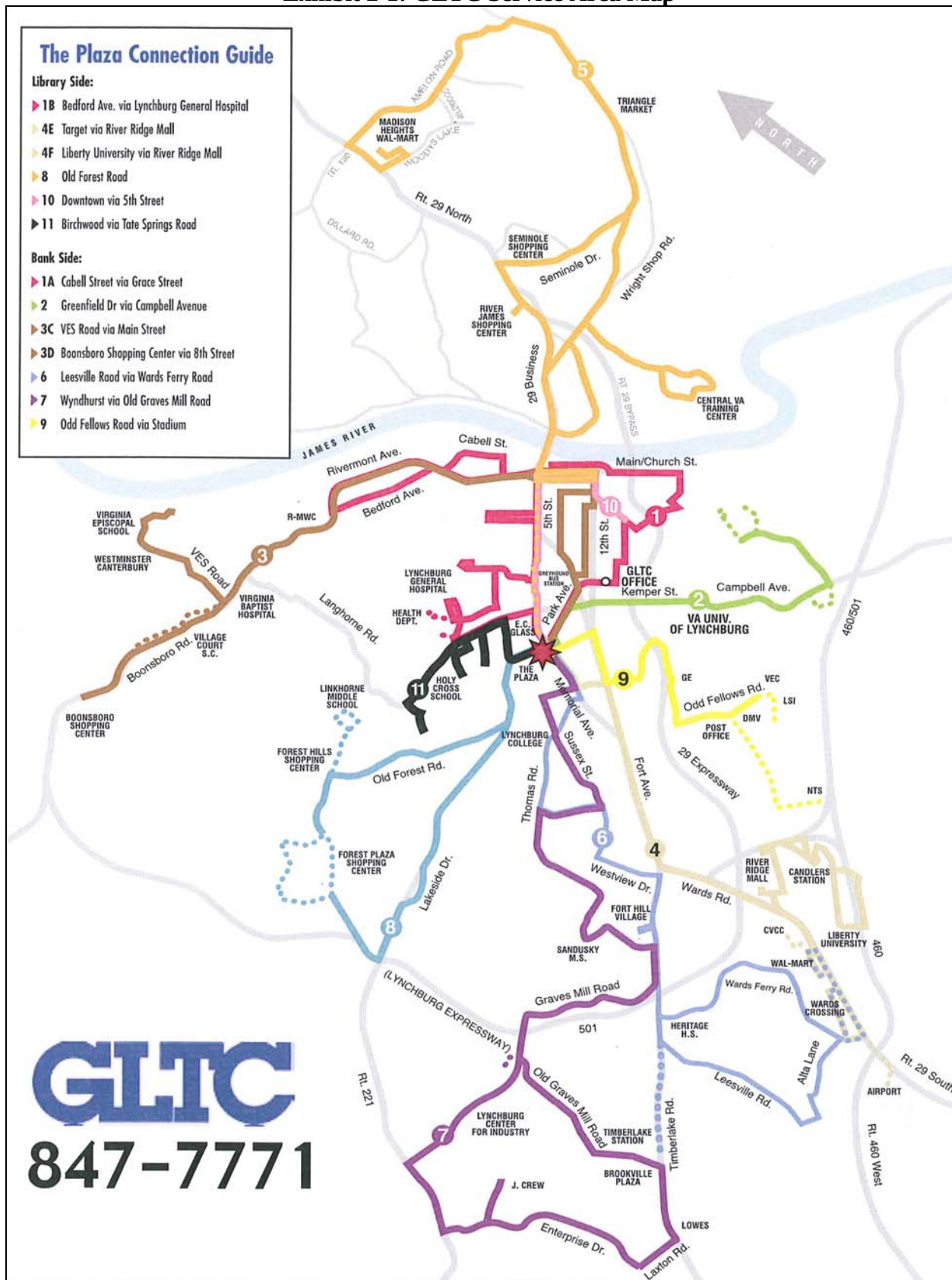
The Board of Directors meets monthly, generally at the GLTC office, located at 1301 Kemper Street in Lynchburg. Board members participate in several three-member committees that also meet regularly: the Community Relations Committee, Performance Monitoring Committee, Planning Committee, and Governance Committee. GLTC also has two customer advisory committees, consisting of everyday riders who are appointed by the Board of Directors. The Americans with Disabilities Act (ADA) Advisory Committee and the Customer Advisory Committee meet with GLTC staff members bi-monthly to provide input on GLTC services. These meetings are generally held at GLTC’s office building and open to the public.

Services

GLTC manages and operates public transit services in the City of Lynchburg and a portion of Madison Heights in Amherst County, Virginia. Fifteen fixed route services operate Monday through Friday, from 6:00 a.m. to 9:30 p.m., 13 routes operate on Saturdays during the same time frame, and nine routes operate on Sundays from 10:00 a.m. to 5:30 p.m. The GLTC service area map is shown in Exhibit 2-1.

² GLTC website. Available at <http://www.gltconline.com/>

Exhibit 2-1: GLTC Service Area Map



Most GLTC fixed route services meet at the Plaza shopping center on Memorial Avenue, which acts as the main transfer point within the service network. The bus schedules were designed so that many routes meet at the Plaza every half hour, at ten minutes and forty minutes past the hour. This “pulse” system, where the routes are scheduled to meet at the Plaza at the same time, facilitates convenient transfers. Most routes operate at half-hour or hourly headways (frequencies), with the exception of a few stops in Madison Heights that are only served every two hours. Ridership on the fixed route system for FY 2009 was around 1.1 million passenger trips.

The regular fare is \$1.50 per person per one-way trip. Seniors and persons with disabilities pay a reduced fare of \$0.75. Up to four children, under 45 inches tall, may travel free with each adult. Free transfers are available between buses to complete a one-way trip, though the transfer must be used within 60 minutes of being issued. GLTC also offers various passes, which provide a discounted rate per trip with higher use of the services. Monthly, weekly, and daily passes are available to bus riders. A ten ride pass is also available. An “EZ-Pass” with reduced fares is available for seniors and persons with disabilities who want to ride the fixed route service. Paratransit riders may purchase \$30 value cards that serve as debit cards for paratransit service trips.

GLTC operates a paratransit service for eligible individuals who have disabilities that prevent them from using the fixed route services. Paratransit involves door-to-door transportation from a rider’s origin to their destination within GLTC’s service area. Paratransit services are provided during the same times as fixed route services. Riders must call to reserve a paratransit trip in advance, at least by 5:00 p.m. the evening before the trip is needed and up to fourteen days in advance. The fare is \$3.00 per person per one-way trip.

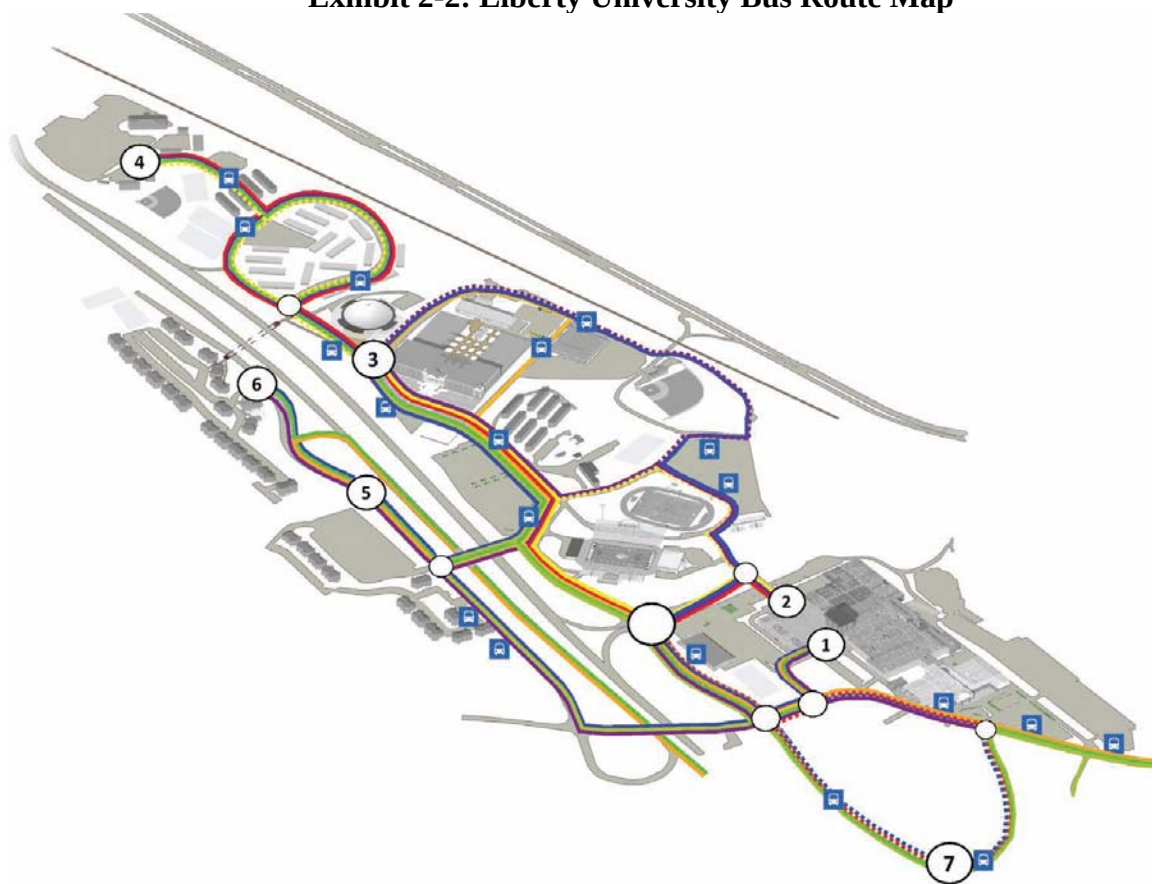
GLTC runs a “Bikes on Buses” program to encourage riders to combine transit trips and bicycling (to reach the origin bus stop or final destinations from the destination bus stop). Riders must pay a one-time fee of \$3.00 to obtain a Bikes on Buses ID card. The agency provides optional orientation to help riders learn how to load their bikes onto the bike racks at the front of the buses.

GLTC operates LU Transit under contract with Liberty University (LU). LU Transit includes ten routes that serve the university during the school year (mid-August to mid-December and mid-January to mid-May), providing more than 140 hours of service per week. The LU Transit routes serve all campuses within Liberty University and provide connections to nearby locations, including the Lynchburg Inn and River Ridge Mall. During the week, buses run from about 5:30 a.m. to 2:00 a.m. (Some routes operate over shorter time spans.) Service operates on Saturday from about 8:00 a.m. to 2:00 a.m. Service during peak periods is as frequent as every 2 to 3 minutes, and during non-peak periods approximately 30 minutes to an hour depending on the route. Ridership on LU Transit was more than 1.9 million in fiscal year 2009, which accounts for almost two-thirds of the total ridership on GLTC services.³

GLTC has also partnered with LU and Cornerstone, a property developer, to provide a new commuter service between the campus and the Cornerstone properties on Greenview Drive. This

³ Liberty University website, “LU Transit Services” <https://www.liberty.edu/index.cfm?PID=12354>

service operates between 7:00 a.m. and 7:00 p.m. on class days. LU Transit also provides services between the campus and the Lynchburg Regional Airport and Kemper Train/Bus Station around the winter holidays. The U-PASS program is another component of the partnership between GLTC and LU. The U-PASS allows current resident students and employees of LU to ride the GLTC fixed route system for free throughout the year. See Exhibit 2-2 for a map of LU Transit bus routes.

Exhibit 2-2: Liberty University Bus Route Map

LU Transit System Map Legend		
Route Color	Route	Route Description
	LX1	DeMoss to Campus North Express via University Blvd
	LX1a	LX1 detour during non-peak times (see LX1 schedule)
	L1	South Campus to Campus North via University Blvd
	L1E	L1 Route extension to Candler's Station after 6 PM and weekends
	L2	Campus East to Main Campus via Campus North
	L2E	L2 Route extension to Candler's Station after 6 PM and weekends
	L3	Lynchburg Inn to Main Campus via Campus North and Campus East
	LM	Liberty Mountain Loop - All Major LU Campus Stops
	LME	Liberty Mountain Loop - Early morning/late night route changes
	4F	Liberty University to Plaza via River Ridge Mall (ID Required)
	14	Liberty University to Wards Rd via River Ridge Mall
		Scheduled Stops
		Major Intersections
		Request Stops

2.2 The GLTC Service Area

The GLTC service area includes the City of Lynchburg and the adjacent community of Madison Heights in Amherst County, Virginia. Lynchburg is an independent city of 50 square miles near the geographic center of the Commonwealth of Virginia. The city is located in the foothills of the Blue Ridge Mountains along the banks of the James River. Lynchburg is located approximately 180 miles southwest of the nation's capital, Washington, D.C. and 114 miles east of the state's capital, Richmond. The population of the city is about 73,000 according to 2008 estimates by the U.S. Census Bureau.

Madison Heights is a census-designated place in Amherst County. The population was 11,584 at the 2000 census. It is part of the Lynchburg Metropolitan Statistical Area.

Population, Social, and Demographic Characteristics

Exhibit 2-3 provides population data about Lynchburg, the Commonwealth of Virginia, and the U.S. The population of Lynchburg has grown by more than 11 percent since 1990 and has grown at a faster rate than the population of Virginia (9.4 percent) and the U.S. (7.8 percent). This rapid growth has implications for the need for enhanced transportation and transit capacity.

Exhibit 2-3: Local, State, and National Population Data

Year	Lynchburg City	Virginia	United States
2008	72,596	7,769,089	304,059,724
2007	71,750	7,698,775	301,290,332
2006	69,902	7,628,347	298,362,973
2005	67,966	7,546,725	295,560,549
2004	66,459	7,454,688	292,892,127
2003	66,029	7,363,300	290,210,914
2002	64,960	7,276,785	287,726,647
2001	64,812	7,188,251	285,039,803
2000	65,279	7,104,354	282,171,936
Percent change 2000-2008	11.2%	9.4%	7.8%

Source: U.S. Census Bureau, Population Estimates Program (July 2008)

Exhibit 2-4 provides data on demographic and social characteristics for Lynchburg with comparative data for Virginia and the U.S. The U.S. Census Bureau collected the data as part of the 2006-2008 American Community Survey. The first group of data provides information on the breakdown of the population by sex and age. In terms of age, Lynchburg's population skews toward both younger and older ages. Lynchburg has a high proportion of persons 65 and older (16.6 percent) compared to Virginia (11.8 percent) and the U.S. (12.6 percent). At the same time, the median age in Lynchburg (33.6 years) is lower than the median age for Virginia (37.1 years) and the U.S. (36.7 years). The presence of high proportions of older and younger residents tend to increase demand for transit services since these populations are less likely to own and operate automobiles. In terms of social characteristics, Lynchburg has household and

family sizes that are slightly lower than the average in Virginia and the U.S. This trend may decrease opportunities to share a car or obtain a ride with a relative in the absence of transit.

Exhibit 2-4: Social, Demographic, Housing, Economic, and Travel Data

	Lynchburg	Virginia	U.S.
Demographic Characteristics			
Male	45.7%	49.1%	49.3%
Female	54.3%	50.9%	50.7%
65 years and over	16.6%	11.8%	12.6%
Median age (years)	33.6	37.1	36.7
White	67.4%	70.7%	74.3%
Black or African American	27.6%	19.5%	12.3%
Asian	2.0%	4.8%	4.4%
Hispanic or Latino (of any race)	1.9%	6.6%	15.1%
Speak a language other than English at home (population 5 years and over)	5.4%	13.2%	19.6%
Social Characteristics			
Average household size	2.38	2.54	2.61
Average family size	3.05	3.10	3.20
High school graduate or higher	83.2%	85.7%	84.5%
Bachelor's degree or higher	27.6%	33.2%	27.4%
Housing Characteristics			
Occupied housing units	89.2%	89.7%	88.0%
Vacant housing units	10.8%	10.3%	12.0%
Owner-occupied housing units	58.0%	69.3%	67.1%
Renter-occupied housing units	42.0%	30.7%	32.9%
Median value (dollars)	135,500	259,200	192,400
Economic Characteristics			
In labor force (population 16 years and over)	57.5%	67.6%	65.2%
Families below poverty level	13.3%	7.0%	9.6%
Individuals below poverty level	19.5%	9.9%	13.2%
Median household income (in 2008 inflation-adjusted dollars)	37,929	61,044	52,175
Median family income (in 2008 inflation-adjusted dollars)	51,272	72,733	63,211
Per capita income (in 2008 inflation-adjusted dollars)	22,053	32,224	27,466
Travel Characteristics			
Mean travel time to work in minutes (workers 16 years and over)	16.4	26.8	25.3

Source: U.S. Census Bureau, 2006-2008 American Community Survey

Housing Characteristics

Exhibit 2-4 also provides data on housing characteristics including percentages of occupied versus vacant housing units, owner-occupied versus renter-occupied housing units, and median home values. Lynchburg has a very low percentage of owner-occupied housing units. Only 58 percent of local residents live in owner occupied housing, well-below the 69 percent statewide and the 67 percent nationwide averages. The high percentage of renter occupied housing units is suggestive of the presence of a large number of lower-income residents. Median home values for Lynchburg substantiate this finding. Median home values in Lynchburg are \$135,500, which is much lower than the median value in Virginia (\$259,200) and the U.S. (\$192,400). Low income

populations tend to have a high propensity to need and use transit services than more affluent populations.

Economic Characteristics

Exhibit 2-4 also provides data on economic characteristics of the region. The region has a significant economically disadvantaged population relative to the state and the nation. For example, Lynchburg has a labor-force participation rate that is 10 percent lower than Virginia's average and almost eight percent lower than the national average. The percentage of individuals below the poverty line in Lynchburg is almost 10 percent higher than the state average and more than six percent higher than the national average. Family poverty rates mirror per capita poverty rates.

The median household income for Lynchburg is \$37,929, which is about \$23,000 less than the state median value and about \$14,000 less than the national median value. Lynchburg's per capita income is \$22,053. This value trails the state average by more than \$10,000 and the national average by more than \$5,000.

In summary, the labor-force participation rates, percentages of families and individuals below the poverty level, and median household income levels all indicate a population with a significant economically disadvantaged subset of people. This subset likely depends heavily on transit for mobility and access to economic opportunities.

Exhibit 2-5 provides information on the distribution of employment in Lynchburg. In total, 2,327 establishments provide employment to 53,231 workers, with an annual total payroll of almost \$1.9 billion. Local employment is distributed over a number of industries. The largest local industries in terms of employment identified by the U.S. Census Bureau are manufacturing, health care and social assistance, retail trade, educational services, and accommodation and food services.

Exhibit 2-5: Establishments, Employment, and Payroll by Industry

Industry Description	Establishments (Number)	Paid Employees (for pay period including March 12)	Paid employees (percent)	Annual payroll (\$1,000)
Agriculture, forestry, fishing and hunting	2	a	--	D
Utilities	6	b	--	D
Construction	191	2,572	4.8%	98,191
Manufacturing	95	9,306	17.5%	504,118
Wholesale trade	91	1,172	2.2%	46,314
Retail trade	416	7,198	13.5%	156,032
Transportation and warehousing	50	893	1.7%	31,912
Information	39	586	1.1%	21,455
Finance and insurance	175	2,929	5.5%	140,152
Real estate and rental and leasing	101	417	0.8%	14,085
Professional, scientific, and technical services	208	3,209	6.0%	222,514
Management of companies and enterprises	13	161	0.3%	14,716
Administrative and Support and Waste Management and Remediation Services	96	2,210	4.2%	38,704
Educational services	39	5,967	11.2%	122,027
Health care and social assistance	266	8,875	16.7%	371,681
Arts, entertainment, and recreation	32	426	0.8%	6,485
Accommodation and food services	230	5,113	9.6%	59,612
Other services (except public administration)	276	2,117	4.0%	39,600
Industries not classified	1	a	--	D
Total for all sectors	2,327	53,231	100.0%	1,892,871
a: 0 to 19 employees				
b: 20 to 99 employees				
D: Withheld to avoid disclosing data for individual companies; data are included in higher level totals.				

Source: U.S. Bureau of the Census, 2007, County Business Patterns

Exhibit 2-6 provides a listing of the 25 largest employers in the city and the approximate number of employees they have. Centra Health is the largest employer by a large margin. Centra Health, Areva, and Genworth Financial, Inc. are the only employers with more than 1,000 local employees.

Exhibit 2-6: Top 25 Businesses and Approximate Number of Employees

Employer Name	Product/Service	Employees
Centra Health	Healthcare services	4,500
Areva	Engineering services; refueling, and maintenance of nuclear power facilities	1,512
Genworth Financial, Inc.	Insurance and investment services	1,240
J. Crew Outfitters	Catalogue clothing company for all ages – with local outlet store	800
Nationwide Insurance Co.	Auto, home, and life insurance services	585
Kroger	Grocery stores	550
R.R. Donnelley Printing Co.	Rotogravure and commercial printing	550
Wal-mart Stores, Inc.	Discount, mass merchandise, and retail	545
M/A-Com, Inc.	Radio equipment	505
Parker-Hannifin Corporation	Rubber and plastic seals; gasket	500
Frito-Lay, Inc.	Snack food manufacturer	482
C.B. Fleet Co., Inc.	Manufacturer and marketing of health and beauty aids	361
Southern Air, Inc.	Mechanical and electrical design/build construction – HVAC systems	354
StarTek	In-bound Call Center	348
Norcraft, Inc.	Manufacturers Mid-Continent Cabinetry product line	335
Griffin Pipe Products, Inc.	Manufactures pipes and sewer pipes for the water/sewer industry	310
Flowserve	Actuators	225
Tri-Tech Laboratories	Cosmetics, fragrances, health and beauty aids	217
Aerofin Corp	Coils and heat exchangers for the electric utility, and pulp and paper industry	205
Lowe's	Retail building suppliers	200
Delta Star, Inc.	Electrical transformers and other industrial products	179
Weyerhaeuser Co.	Sales and manufactures corrugated packaging	178
Wachovia Bank	Full service bank	175
BB&T	Full service banking	170
Flowers Banking Co.	Produces bread products	140
Total		15,166

Source: City of Lynchburg website, <http://www.lyncburgva.gov/Index.aspx?page=217>

This listing omits public employers. The largest public employers in the area are the Lynchburg City Schools and Central Virginia Community College.

Other Transportation Facilities

The GLTC system includes service to the Lynchburg Amtrak and Greyhound Stations on Kemper Street, off Park Avenue. Four trains daily serve Lynchburg, providing connections north toward D.C. and New York and south toward Atlanta and New Orleans on the “Crescent” train service, and farther north up to Boston on the “Northeast Regional” train service.⁴ Passengers can also connect to a range of destinations across the country via Greyhound services.

Lynchburg has two major freight railroads. CSX Transportation has a line and a small yard in the city. Lynchburg is also a crossroad of two Norfolk Southern lines. One of the Norfolk Southern

⁴ Amtrak website, <http://www.amtrak.com/servlet/ContentServer/Page/1237608331901/1237405732511>

lines is the former Southern Railway main line. The line runs between Washington, D.C. and Atlanta, Georgia.

Lynchburg Regional Airport provides service by US Airways Express to Charlotte, North Carolina and Delta Connection to Atlanta. About 7,400 passengers fly in and out of the airport each month.

Primary roadways in Lynchburg include U.S. Route 29, U.S. Route 501, U.S. Route 221, running north to south, and U.S. Highway 460, running east to west. Lynchburg is the largest city in the United States not served by an interstate, although much of Route 29 meets interstate standards.

Exhibit 2-7 provides a map of the location and portions of the transportation network for the Lynchburg area. Included are the outlines of the city, the surrounding counties, the locations of the major highways, and the local airports.

Chapter 3: Previous Research

The calculation of the economic benefits of a transit system is at once a simple and complicated exercise. It is simple from an intuitive perspective. Many previous studies on the issue imagine the study area with and without the transit system and quantify the difference in community well-being. If there were no transit, how would transit riders get to where they want to go? What would the costs of alternative travel modes be? What savings would local government receive from not subsidizing the transit system? What would the losses be in terms of federal and state funding? What would the losses be in terms of employment and purchases by the system?

Economic impact studies must consider difficult questions. For example, what is the cost to an elderly person who can no longer visit a friend? What is the value of increased air pollution and congestion from increased car use? How does one value the time savings or losses from switching between different modes of transportation?

To develop a robust economic impact methodology, the study team conducted a literature review of previous research that assessed the economic impacts of transit investments. A thorough review of available sources resulted in the identification of several relevant trade journal articles, academic analyses, government publications, and regional studies. The study team also utilized information from transportation databases and university-based transportation research centers. Study team members also consulted with contacts at the Federal Transit Administration (FTA) and the American Public Transit Association (APTA) for recommendations of documents issued by their respective organizations.

This chapter reviews previous research related to the economic impact of transit. The review of these studies categorizes them into two groups. The first group includes studies that develop an overall methodology for the estimation of transit benefits and the second group includes studies that examine the measured benefits of one or more transit systems. The purpose of these two sections is to (1) provide the reader with an economic framework regarding the measurement of benefits and (2) provide the results developed in previous studies. This knowledge is necessary to understand the methodology and calculations selected and implemented in the remainder of this study.

3.1 Methodological Studies

Several authors have conducted research that aspires to provide an overall framework for the analysis of the benefits of transit. This section focuses on the review of three major research efforts:

- A U.S. Department of Transportation publication titled “Measurement of Transit Benefits”
- A Victoria Transport Policy Institute (VTPI) guidebook titled “Evaluating Public Transit Benefits and Costs - Best Practices Guidebook”
- A Transit Cooperative Research Program (TCRP) study titled “Estimating the Benefits and Costs of Public Transit Projects: A Guidebook for Practitioners”

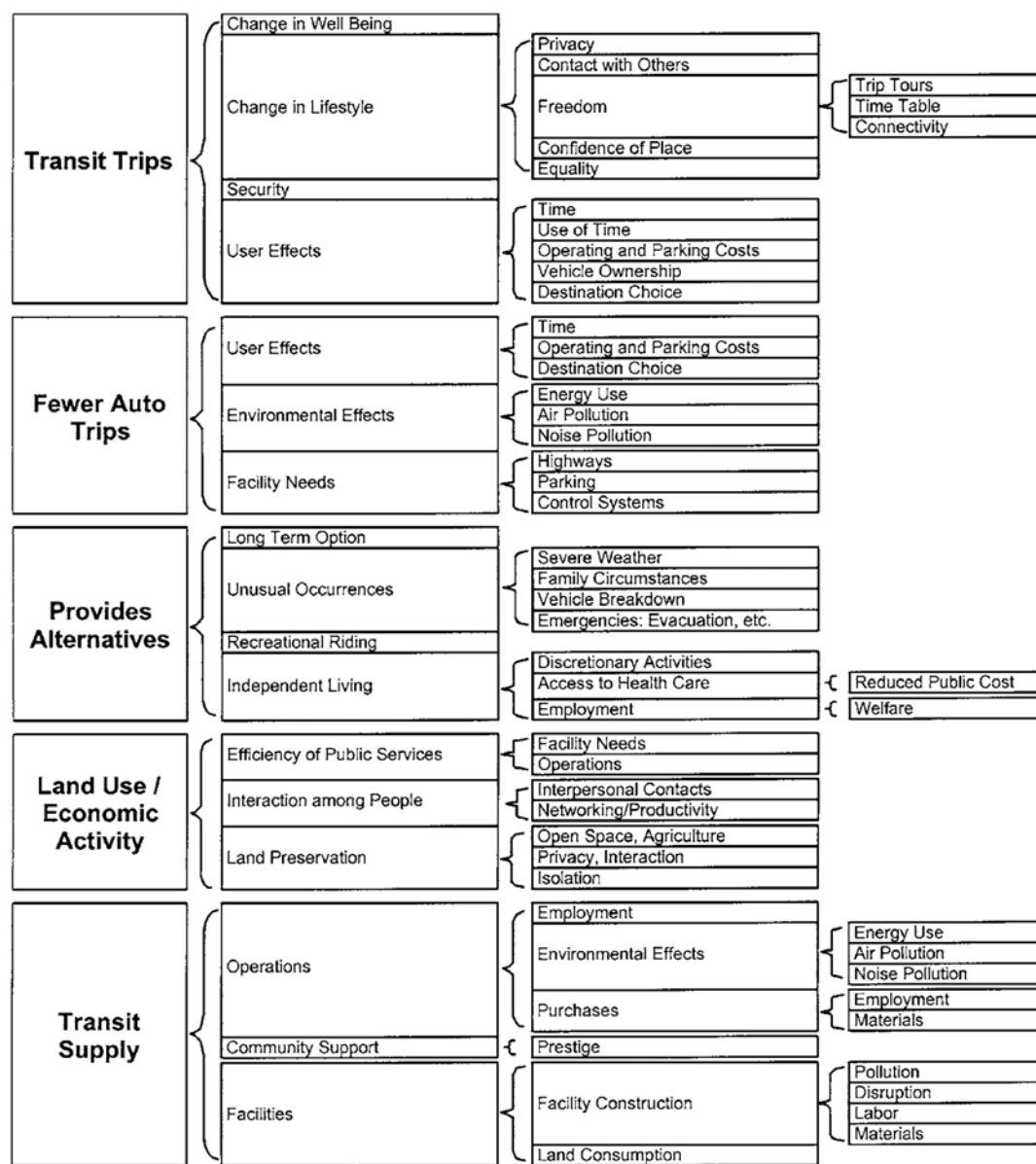
U.S. Department of Transportation: The Measurement of Transit Benefits

The Center for Urban Transportation Studies at the University of Wisconsin-Milwaukee prepared a study for the U.S. Department of Transportation that reviews principles and issues, provides a framework for benefit analysis, and describes measurement techniques related to transit benefits.⁵ This effort represents a seminal work in the field and it provides a detailed and comprehensive structure for examining and measuring transit benefits.

This study postulates that transit benefits fall into four groups. First, transit provides an alternative means of travel. Whether or not it is used, it is there as an option for emergencies, unusual occurrences, for the future, and for guests and tourists. Second, without transit, travel will still occur whether by car, taxi, or other means. This travel results in changes in user resources (time, cost, etc.), environmental consequences, and congestion effects. Third, the presence of transit alters the value of land, causes shifts in land use, preserves open space, affects interaction among people, and changes the efficiency of public service provision. Fourth, the supply of transit services provides benefits through employment for transit employees and through purchases and capital expenditures.

Exhibit 3-1 illustrates these categories and their components with a high level of detail in the form of a benefit tree. The benefit tree shows how consequences are related. The benefit tree grows in specificity from right to left (in the original report the categories grew in specificity from top to bottom). Some of the benefits are readily quantifiable, others are more difficult to quantify, and some are almost impossible to quantify. Note that each effect represented by a box can be classified as a consequence or impact of transit, but not every box can be classified as a “benefit.” The determination as to whether an effect is a benefit depends on the viewpoint of the observer (e.g. local, region, state, nation), the scope of the analysis, and the nature of the alternatives.

⁵ Beimborn, Edward, Alan Horowitz, Julie Schuetz, and Gong Zejun. 1993. Measurement of Transit Benefits. Washington D.C.: University Research and Training Program, Office of Technical Assistance and Safety, Urban Mass Transportation Administration. June. DOT-T-93-33. <http://www.bts.gov/NTL/DOCS/638.html>.

Exhibit 3-1: Transit Benefit Tree

Source: Beimborn, et.al. (1993)

VTPI: Guidebook for Evaluating Public Transit Benefits and Costs

The Victoria Transport Policy Institute (VTPI) has developed a variety of papers, articles, and software related to transit benefits. In 2009, VTPI published a best practices guidebook for evaluating public transit benefits and costs.⁶ This guidebook describes how to create a comprehensive framework to evaluate the full impacts, including benefits and costs, of a transit service. It also identifies various categories of impacts, describes how to measure them, and provides useful transit statistics.

⁶ Todd Litman, Evaluating Public Transit Benefits and Costs - Best Practices Guidebook, Victoria Transport Policy Institute, April 12, 2009.

The VTPI guidebook argues that conventional transport evaluation models tend to undervalue public transit because they overlook many benefits. The guidebook groups impacts into the following categories:

- Transit Service Costs
- Impacts on Existing Transit Users
- Mobility Benefits
- Efficiency Benefits
- Land Use Impacts
- Economic Development Impacts

Categories of benefits include sub-category benefits. For example, mobility benefits result from increased travel choices created by transit, particularly for people who do not own or drive a personal automobile. Since non-driving adults tend to be more economically, physically, and socially disadvantaged than adults who own and drive cars, this category also includes equity benefits. Another category, efficiency benefits, results from reduced automobile use. Efficiency benefits include transportation cost savings, congestion reduction, parking cost savings, reduced accidents, and a variety of environmental benefits. Exhibit 3-2 reproduces a summary table published in the VTPI guidebook that provides a list of transit impacts and their descriptions.

Exhibit 3-2: VTPI Transit Impact Categories and Descriptions

Impact Category	Description
<i>Transit Service Costs</i>	<i>Financial costs of providing transit services</i>
Fares	Direct payments by transit users.
Subsidies	Government expenses to provide transit services.
<i>Existing User Impacts</i>	<i>Incremental benefits and costs to existing transit users</i>
Various	Changes in fares, travel speed, comfort, safety, etc. to existing transit users.
<i>Mobility Benefits</i>	<i>Benefits from increased travel that would not otherwise occur.</i>
Direct User Benefits	Direct benefits to users from increased mobility.
Public Services	Support for public services and cost savings for government agencies.
Productivity	Increased productivity from improved access to education and jobs.
Equity	Improved mobility that makes people who are also economically, socially or physically disadvantaged relatively better off.
Option Value/Emergency Response	Benefits of having mobility options available, in case they are ever needed, including the ability to evacuate and deliver resources during emergencies.
<i>Efficiency Benefits</i>	<i>Benefits from reduced motor vehicle traffic.</i>
Vehicle Costs	Changes in vehicle ownership, operating and residential parking costs.
Chauffeuring	Reduced chauffeuring responsibilities by drivers for non-drivers.
Vehicle Delays	Reduced motor vehicle traffic congestion.
Pedestrian Delays	Reduced traffic delay to pedestrians.
Parking Costs	Reduced parking problems and non-residential parking facility costs.
Safety, Security and Health	Changes in crash costs, personal security and improved health and fitness due to increased walking and cycling.
Roadway Costs	Changes in roadway construction, maintenance and traffic service costs.
Energy and Emissions	Changes in energy consumption, air, noise and water pollution.
Travel Time Impacts	Changes in transit users' travel time costs.
<i>Land Use</i>	<i>Benefits from changes in land use patterns.</i>
Transportation Land	Changes in the amount of land needed for roads and parking facilities.
Land Use Objectives	Supports land use objectives such as infill, efficient public services, clustering, accessibility, land use mix, and preservation of ecological and social resources.
<i>Economic Development</i>	<i>Benefits from increased economic productivity and employment.</i>
Direct	Jobs and business activity created by transit expenditures.
Shifted expenditures	Increased regional economic activity due to shifts in consumer expenditures to goods with greater regional employment multipliers.
Agglomeration Economies	Productivity gains due to more clustered, accessible land use patterns.
Transportation Efficiencies	More efficient transport system due to economies of scale in transit service, more accessible land use patterns, and reduced automobile dependency.

Source: TCRP Report 78, 2002, "Estimating the Benefits and Costs of Public Transit Projects: A Guidebook for Practitioners."

TCRP: Estimating the Benefits and Costs of Public Transit Projects

The Transit Cooperative Research Program (TCRP) published a guidebook for estimating the benefits and costs of public transit in 2002.⁷ The study notes that its findings will be of particular interest to individuals who plan and evaluate the benefits and costs of new investments in public transportation.

⁷ TCRP Report 78, 2002, "Estimating the Benefits and Costs of Public Transit Projects: A Guidebook for Practitioners." Available at <http://onlinepubs.trb.org/onlinepubs/tcrp/tcrp78/guidebook/tcrp78.pdf>

The TCRP study is divided into five sections. The first section describes how to use the guidebook and provides an overview of benefit-cost evaluation concepts and their application to transit projects. The second section addresses the basic benefits and costs of transit projects, including impacts on travel, secondary impacts on the environment and safety, and the direct costs and revenues of transit projects. The third section discusses other benefits and costs of transit projects, including impacts on land use and land development, economic impacts, and the distribution of impacts. The fourth section provides an example of a transit system evaluation. The fifth section consists of four appendices that provide a bibliography, integrated models for conducting comprehensive benefit-cost analysis, sample calculations, and conversion factors for calculating constant dollars. The TCRP study uses the following classifications for transit impacts:

- Travel Impacts
- Secondary Impacts
- Direct Costs and Revenues
- Impacts on Land Use and Development
- Impacts on Economic Development
- Distribution of Transit's Impacts

3.2 Economic Impact Case Studies

Transit economic impact case studies, conducted around the country, have examined individual transit districts, as well as entire cities and states. Additional studies have examined investments in certain improvements or additional services as well as disinvestments or discontinuation of certain services. As this study is concerned with the benefits of the entire operations of a transit service for a small city, the focus of this section is on similar evaluations.

The majority of the studies reviewed follow a standard economic impact methodology that evaluates the benefits and costs of transit against a baseline or null alternative. The authors of these studies often define the baseline as the current service. However, when a study evaluates the overall benefits of a transit service, the baseline usually becomes a theoretical discontinuation of all transit service and current service becomes the alternative for which benefits are calculated. The Edward Beimborn study for the U.S. DOT cautions against such an assumption for large urban areas where the complete elimination of transit service is very unrealistic. Beimborn, however, does not categorize the use of such an assumption as unacceptable for smaller urban areas.

TCRP Assessment of the Economic Impacts of Rural Public Transportation

A study conducted as part of the Transit Cooperative Research Program examined eight rural transit systems in depth and calculated benefit-cost ratios for each of them.⁸ Among the in-depth

⁸ Transit Cooperative Research Program, Report 34, "Assessment of the Economic Impacts of Rural Public Transportation," Jon E. Burkhardt, James L. Hedrick, Adam T. McGavock, Sponsored by the Federal Transit Administration in Cooperation with the Transit Development Corporation, Transportation Research Board, National Research Council, National Academy Press, Washington, D.C., 1998.
http://onlinepubs.trb.org/onlinepubs/tcrp/tcrp_rpt_34.pdf

case studies, the benefit-cost ratios ranged from 4.22/1 to 1.67/1. Four of the eight systems had benefit-cost ratios in the narrow range of 3.03/1 to 3.55/1. The average ratio of benefits to costs among the eight systems studied in depth was 3.12 to 1. Exhibit 3-3 summarizes the results of the study.

Exhibit 3-3: Benefit-Cost Ratios for TCRP Case Study Transit Systems

SYSTEM'S NAME	ANNUAL OPERATING EXPENSE	NUMBER OF VEHICLES	NUMBER OF TRIPS/YEAR	BENEFIT ESTIMATE	BENEFIT/ COST RATIO	DATA YEAR	PRINCIPAL BENEFIT TYPES
Blacksburg Transit, Virginia	\$1,677,975	33	1,470,000	\$2,819,350	1.67/1	FY 96	Traffic Reduction Parking
COLTS (Lee County), North Carolina	\$258,986	15	54,339	\$1,093,316	4.22/1	FY 95	Dialysis Welfare to work Nutrition Training
County Commuter, Maryland	\$1,089,201	12	290,000	\$3,462,717	3.18/1	FY 94	Employment Medical Training
Delta Area Rural Transportation System, Mississippi	\$800,350	21	109,930	\$2,843,880	3.55/1	FY 96	Employment Dialysis
JAUNT, Inc., Virginia	\$1,641,710	60	209,799	\$3,040,500	1.85/1	FY 96	Employment Disabled Empl. Dialysis/medical
Pee Dee Regional Transportation Authority, South Carolina	\$3,808,025	89	531,455	\$12,362,423	3.25/1	FY 96	Employment Welfare to work Dialysis Emergency
STAR, Sweetwater County, Wyoming	\$554,859	14	83,659	\$1,681,287	3.03/1	FY 96	Employment Medical Indep. Living
Zuni Entrepreneurial Enterprises, New Mexico	\$115,726	4	15,998	\$488,880	4.22/1	FY 96	Education Employment

Source: Transit Cooperative Research Program, Report 34, 1998, "Assessment of the Economic Impacts of Rural Public Transportation."

The approach of the TCRP study focused on the primary benefits provide by each transit system and did not attempt to quantify secondary benefits that accrue to the respective transit service regions examined. Therefore, it is likely that the TCRP study slightly undervalues the total benefits of these transit systems. The application of a standardized benefit estimation method across the different regions may also account for the narrow range of results.

Danbury Study and Literature Review

The research team for the GLTC study conducted a similar analysis for Danbury, Connecticut's transit system, which is called Housatonic Area Regional Transit (HART). The Danbury study

only examined the benefits of the transit system from a local perspective. The sum of the benefits equaled \$5.8 million and the ratio of benefits to costs was 9.7 to 1. This ratio suggests that every \$1 spent by local governments on the HART system returns \$9.70 dollars in benefits to the local community.

The study also included a literature review of other transit system economic impact studies. The literature review concluded that the findings for Danbury were within the range of benefit-cost ratios found for other transit systems in cities such as Memphis, TN (19.96 to 1)⁹; Philadelphia, PA (8.33 to 1)¹⁰; and Roanoke, VA (3.9 to 1).¹¹ The Danbury benefit-cost ratio was also in line with a (3.4 to 1) benefit-cost ratio developed by the Tennessee Department of Transportation for transit systems in all urban areas in Tennessee.¹²

⁹ Memphis Area Transit Authority. "An Assessment of the Economic Benefits of the Memphis Area Transit Authority to the Memphis Region," Memphis, Tennessee, November 1990.

¹⁰ Urban Institute/Cambridge Systematics, Inc. "Public Transportation Renewal as an Investment: The Economic Impacts of SEPTA on the Regional and State Economy," for the Delaware Valley Regional Planning Commission, June 1991.

¹¹ Greater Roanoke Transit Company, "Roanoke 'No Transit' Cost Study," Roanoke, Virginia, April 1981.

¹² Tennessee Department of Transportation, "Costs and Benefits of Public Transit in Tennessee's Urban Areas," Submitted to the State General Assembly, Nashville, Tennessee, February 1982.

Chapter 4: Study Methodology

The primary objective of this study is to estimate the annual economic impacts of GLTC on the Lynchburg region from a local perspective. The economic impacts of GLTC were measured against a theoretical scenario in which transit in Lynchburg no longer exists. The economic impacts that were measured include:

- Transit trips
 - Avoided costs for transit users switching to alternative transportation modes
 - Avoided economic and social costs of trips that would be cancelled
- Fewer auto trips
 - Avoided externalities such as accidents, air pollution, and congestion
- Transit supply
 - Lost GLTC employee compensation
 - Lost GLTC operating and capital purchases
- Lost operating funds for transit

The purposes of the three sections of this chapter are to describe the general methodology for this study. The first section of this chapter discusses some of the key methodological issues involved in estimating transit benefits and describes common shortcomings in past transit benefit studies that have been carefully avoided in this study. The second section of the chapter describes the specific impacts and benefits that the study measures, the reasoning behind the selection of these measures, and how these measures were performed. The third section describes the economic impact model used to estimate direct, indirect, and induced impacts.

4.1 Key Issues in the Economic Methodology

Measuring the benefits of a transit system is a complex task that requires an understanding of relevant economic theory. Important issues in measuring the benefit of a transit system include: (1) the concept of economic transfer; (2) the definition of the area; (3) the use of the null alternative; (4) the use of qualitative versus quantitative measures; (5) the need to avoid double counting of benefits; (6) perceived versus measured benefits; (7) the measurement of secondary or indirect impacts; and (8) the concept of consumer surplus. The following paragraphs describe these methodological issues.

Economic Transfers

Many important impacts of transit (such as employment gains or community prestige) may be of little importance at the state or national level since they involve transfers between regions rather than overall state or national gains. As the geographic scope of analysis is increased, shifts from one area to another internalize and observers will no longer view them as benefits. For example, if due to the loss of transit an individual makes a purchase outside the study area, the study could recognize some loss of revenue to local businesses as a loss of benefits. However, it would still only be a loss to the local economy, not to the state or national economy.

Definition of the Study Area

Similar to the issues affecting economic transfers, changes in the geographic scope of analysis can change the values of various benefits and costs. A federal grant, for example, could be viewed as a benefit from a local perspective, while from the national perspective it is seen only as a transfer from one party to another (e.g., taxpayers to a local transit system). Lynchburg and Madison Heights constitute both the GLTC service area and the definition of the study area for the purposes of this report.

Use of the Null Alternative

Benefits are a relative measurement, which an observer can envision as the savings that occur because of an investment. Economic impact studies often measure benefits by comparing the study area both with and without a change in transit service. As such, the definition of the base or null alternative is important to the measurement of the benefits. The literature includes a number of studies that assume the elimination of all transit services. Observers have criticized these studies as unrealistic, because communities rarely consider the elimination of all transit service. However, assessing benefits in this manner is acceptable if the community might realistically eliminate transit service in the entire area. Such an assumption is reasonable in a smaller service area such as Lynchburg.

Use of Qualitative Versus Quantitative Measures

One of the drawbacks of benefit-cost analysis is the difficulties inherent in quantifying, in dollar terms, certain types of benefits such as the ability to live independently. Some benefits are better described qualitatively than quantitatively. Accordingly, anecdotal information collected from the bus rider surveys is used in this study to illustrate the hardships that local residents might face without the transit system.

Double Counting

Double counting of benefits presents a difficult problem in assessing the benefits of transit systems. For example, if transit services are eliminated some riders will purchase cars in order to complete the trips they need to make in order to go about their daily lives. This will likely lead to increases in transportation costs and accidents as people switch to more car based travel. However, since one of the vehicle costs is insurance, counting both the insurance and the accident costs would result in double counting. This is because insurance covers the costs of accidents. Another example is fuel costs, where double counting can occur between energy savings, fuel taxes, and vehicle operation costs. Another example is travel time savings and land value increases, as time savings may make selected properties more valuable. In estimating each category of benefits, examining and eliminating any possible overlap requires special attention.

Perceived Versus Measured Benefits

Benefits that individuals perceive may differ greatly from those that are measurable. In some sense, benefits occur because people believe them to be important. One example is the value of

transit to individuals that may never use it, but place a value on it as an alternative if their car breaks down. While perceived benefits are difficult to quantify, they are potentially significant.

Indirect Impacts

Each dollar spent in the economy sets in motion additional rounds of spending. Economists refer to this spending as indirect impacts. For example, if a transit patron buys some fruit at a local store, which he or she would not have bought without the option to take transit, the store's employees would work more hours to meet demand. The store fruit employees would then spend their extra wages at a nearby ice cream shop, which increases sales of the local dairy farmer who must buy more gasoline to make deliveries and so on. These indirect impacts are important especially in terms of employment. Economists often use economic input-output models as the best means of estimating indirect impacts. These impacts are an important component of any economic activity.

Consumer Surplus

Consumer surplus is the difference between the maximum total price a consumer would be willing to pay for the amount he or she buys and the actual total price. If someone is willing to pay more than the actual price a good or service is sold for, his or her benefit is how much he or she saves when they don't pay the maximum price he or she is willing to pay. For example, a person may be willing to pay to take a taxi to a medical appointment he or she needs, but since transit offers an alternative form of transportation, the individual is able to purchase transportation services for less than he or she is willing to pay. The difference between the two prices is the consumer surplus and a quantifiable benefit to the individual. Individual consumer surpluses can be utilized to estimate a communitywide total consumer surplus value.

4.2 Economic Methodology

This section discusses the impacts and benefits measured in this study. The impacts and benefits include:

- The gross economic spending power of transit riders
- The value of transit as an option
- The three major groups of transit benefits measured in this study

The gross economic spending power of transit riders and the value of transit are not considered as local benefits in this study. However, the two impact categories are useful economic measures of the importance of transit.

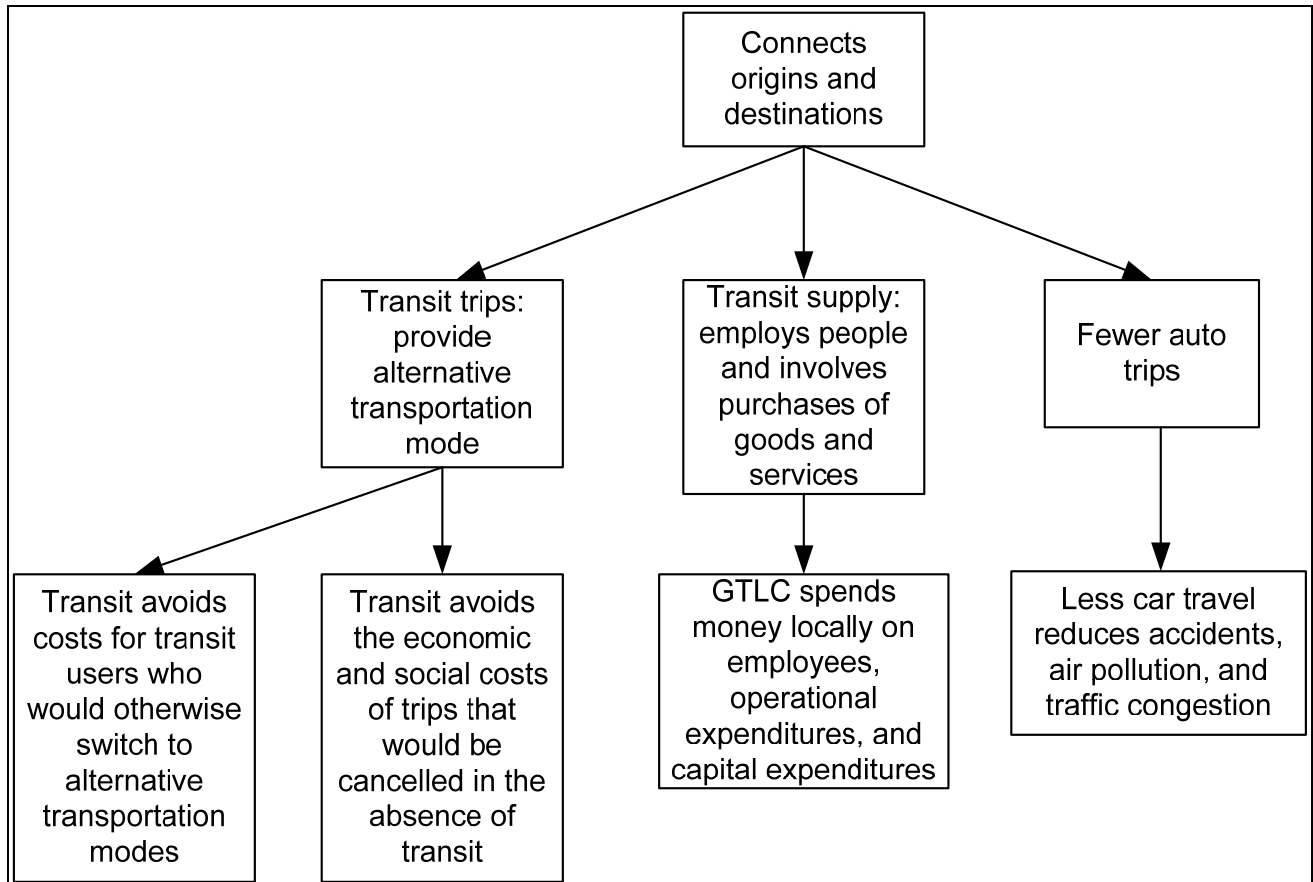
The three benefit groups of transit are measured against a hypothetical scenario in which transit service is eliminated. The three benefit groups and their subcomponents are listed below:

- Transit trips
 - Avoided costs for transit users switching to alternative transportation modes
 - Avoided economic and social costs of trips that would be cancelled

- Fewer auto trips
 - Avoided externalities such as accidents, air pollution, and congestion
- Transit supply
 - Lost GLTC employee compensation
 - Lost GLTC operating and capital purchases

Exhibit 4-1 provides a description of the three transit benefits examined in this study.

Exhibit 4-1: Transit Benefits



The economic impacts of some of these categories were calculated using a state of the art computer based economic input-output model called IMPLAN. The categories that were measured using IMPLAN are:

- Transit trips
 - Avoided economic and social costs of trips that would be cancelled
- Transit supply
 - Lost GLTC employee compensation
 - Lost GLTC operating and capital purchases

The remainder of the section details the issues and estimation methodology related to these different impacts and benefits.

The Gross Economic Spending Power of Transit Riders

The study team measured the economic spending power of GLTC's riders. Understanding the volume of economic activity facilitated by transit helps to dispel the notion that transit is merely another form of public assistance. Instead, it illustrates that transit riders constitute a significant economic force. Such information is potentially persuasive to business owners, particularly those with a transit dependent customer base, who would lose customers because of modal or regional transfers in the absence of transit.

To estimate economic spending power the study team adopted a purchase taxonomy scheme and collected data on a variety of spending categories including medical, school, shopping, social services, social-recreational, work, government office visit, dining, and other.

The methodology for estimating economic spending power was straightforward. The bus rider survey asked each rider to estimate their expenditures on their current trip for a range of goods and services. The analysis expanded these estimates to annual totals for all of GLTC's ridership.

The Value of Transit as an Option

Transit provides an alternative means of travel. Whether or not it is used, it is there as an option for emergencies, unusual occurrences, for the future, or for guests and tourists.

There are four sets of economic benefits of transit as an alternative, which is also sometimes referred to as transit as an option, including: (1) transit as a long-term option; (2) transit for unusual occurrences; (3) recreational riding; and (4) transit as a means for independent living. This study did not estimate transit for recreational riding since such use is a tourist type function limited to systems such as San Francisco's streetcars, Washington D.C.'s metro rail system, or specialized services in heavy tourist areas. GLTC does not appear to attract such riders in significant volumes.

Transit as a long-term option and transit for unusual occurrences were lumped into a single category and viewed as an option to those who do not regularly use transit services. The study also examined transit as a means to independent living.

The ideal method to measure the value of transit as an option is to query non-transit riders in the community as to their willingness-to-pay to preserve the option of transit service even though they have no plans to use it except in some unusual occurrence. While this study did not survey individuals who did not use transit, due to study scope limitations, the rider survey performed for this study identified infrequent riders and queried these individuals on how much they would pay annually to preserve transit as an option. The total value of transit as an option is the average willingness-to-pay multiplied by the number of potential riders with reasonable access to the system. However, since the answers to this question are somewhat speculative, this study does not consider the value of transit as an option to be a measure of the benefit of the transit system.

This study also examined transit as a means to independent living in terms of the percent of bus riders who said their independence would decrease in the absence of transit service. Direct questions in the bus rider survey ascertained the percent of individuals affected. In order to better illustrate the problem and to link the data to real life situations, anecdotal information from answers to open ended questions in the bus rider surveys illustrate the reduction in individual independence that would occur without the transit system.

The Impact of Transit Travel

In the absence of GLTC, many trips made via transit will be made via private cars, taxis, social service agency transportation services, rideshares, or walking. Additionally, some trips currently made via transit will be cancelled. In calculating the impacts of travel related changes, it was necessary to develop data on the choices made by transit riders. The bus rider survey provided these data and estimates of total trips provided expansion factors to reflect the larger population of bus riders.

If GLTC services were not available, local residents would either choose alternative forms of transportation or cancel trips. Each of these options has a cost. To estimate the cost to the region of these two options, a set of calculations were performed. First, total transit passenger miles were divided among those who would travel via alternative transportation modes and those who would cancel their trip in the absence of GLTC based on responses to the bus rider survey. For those who would travel via alternative modes, the breakdown of the alternative modes of transportation they would use was determined. For those who would cancel their trip, the breakdown of their trip purposes was determined. These breakdowns were then applied to passenger miles that were replaced by alternative transportation modes or passenger miles that were no longer traveled due to cancelled trips. Next, costs per mile for alternative means of transportation and a value per cancelled trip by trip purpose were determined from survey results and secondary data sources. Passenger miles, costs per mile for alternative modes of transportation, and a monetary value for each type of cancelled trip were then all converted to a per trip basis using the average passenger trip length by transit service provided by GLTC. Lastly, the cost per trip by an alternative transportation mode was multiplied by the number of trips made via alternative modes of transportation and the value of cancelled trips by type was multiplied by the number of relevant cancelled trips.

Fewer Auto Trips

Many of the bus riders who would use alternative modes of transportation in the absence of transit would switch over to travel in a personal car. These former bus riders will transfer the passenger miles they travel on a bus to passenger miles in a car. Additionally, these former bus riders will likely go on more trips due to the convenience and access provided by car travel. This additional travel, beyond what is replaced by the switch from bus to car travel, is referred to as induced travel. On a per passenger mile basis, traveling in a bus causes fewer accidents, less air pollution, and less congestion than traveling in an automobile. Accordingly, in the absence of transit, the replaced and induced passenger miles generated by travel in cars would likely increase accidents, pollution, and congestion in the Lynchburg region.

The methodology to measure the impacts of higher accidents, air pollution, and congestion was a multistep process. The first step was to determine the number of cars that would be likely be purchased and the number of miles they would be driven in the absence of transit. The second step was to apply the marginal accident, air pollution, and congestion cost per mile for miles replaced by former transit riders in cars. The third step was to apply the full car cost per mile for accident, air pollution, and congestion to induced miles driven beyond those miles that were replaced by former transit riders.

Transit Supply Impacts

Operating a transit service involves employing workers and paying for operating and capital expenditures. Since a large portion of the money spent on these activities is derived from federal and state grants and cannot be shifted to another purpose, the termination of the transit system would bring to an end to a large amount of these impacts, especially in the short run. In the long run a variety of results are possible. For example, it is possible that reduced wage rates and unemployment in the region due to transit service termination could attract new business. It is also possible that the lack of transit service could harm economic development even further. Due to the uncertainty regarding long-term impacts, this study focuses on the short run.

The effects of transit supply activities are extremely important in the study area. These economic impacts include both the direct impact of operating and capital expenditures as well as the indirect impacts of those purchases on other sectors of the economy. However, it is important to keep in mind that the discontinuation of transit services would redirect jobs and spending to other sectors such as taxis and car sales. The assessment of the net economic impact of these activities considered both direct and indirect economic impacts.

Transit supply impacts consists of three categories. The first category measures the impacts caused by the wages paid directly by GLTC to their employees. The second category measures the direct and indirect impact of GLTC's operating expenditures. The third category examines the direct and indirect impact of capital expenditures on construction and durable equipment.

Jobs at GLTC represent a direct economic impact to the local economy. The economic impact on the local economy includes not only these direct economic impacts, but also includes the indirect impacts on local industries that support GLTC operations with materials, components, fuels, supplies, and services. Purchases of construction materials and operating supplies create additional jobs in supply industries and generate indirect employment effects. Earnings from these jobs are spent on goods and services in the local area and create additional jobs and earnings via induced spending effects.

4.3 The IMPLAN Economic Input-Output Model

GLTC employment, GLTC purchases, and the avoided economic and social cost of trips that would be cancelled in the absence of transit are the three benefits calculated in this study using an economic impact model. These benefits require an economic model that calculates impacts across multiple tiers of expenditures. Accordingly, this study uses the IMPLAN model to measure these benefits. IMPLAN is a computer based economic modeling system that uses

input-output analysis to examine the effects of economic activity on a specified region. Input-output models use a matrix representation of a region's economy to predict the effect of changes in one industry on others and by consumers, government, and foreign suppliers on the economy.

Economists refer to the multiple tiers of expenditures calculated by an input-output model as direct, indirect, and induced impacts. Direct impacts are changes in employment, wages, and other economic activity related to an economic activity. Indirect impacts are changes in employment, wages, and other economic activity in industries and sectors that provide inputs to those industries. Induced impacts reflect the increased demand for goods and services in any industry resulting from the increased wages and employment in industries directly and indirectly impacted by activities during and following a change in an economic activity.

The IMPLAN model provides data at three basic levels of geographic disaggregation: national, state, and county. The user can combine these geographic units to construct any regional grouping the user desires. For this study, a Lynchburg model was directly available since Lynchburg is an independent city that is not part of a county.

Foregone spending associated with cancelled trips was estimated using information from the bus rider survey. The foregone spending values were assigned to IMPLAN sectors and run through the model to derive estimates of direct, indirect, and induced impacts.

Data on wages and purchases were available directly from GLTC. The employee survey also collected salary and other demographic information about the transit agency's staff. To estimate the economic impact of GLTC wages, estimates of spending in Lynchburg by employees living outside the city were added to the compensation of employees who resided in Lynchburg. Survey data on employee consumption expenditures were used to divide spending among economic sectors. The IMPLAN model was then used to derive estimates of direct, indirect, and induced impacts.

The study methodology treats GLTC spending on materials, supplies, and services as a direct impact on the local economy. GLTC provided data on operating expenditures between fiscal years 1996 and 2009. The expenditure on materials, supplies, and services were coded to IMPLAN sectors and run through the IMPLAN model to derive estimates of direct, indirect, and induced impacts.

GLTC staff provided both recent (fiscal years 2006 to 2009) and future (six year forecasted) capital budgets. These budgets were used to estimate average yearly spending on capital expenditures. These expenditures were coded by IMPLAN sector and run through the IMPLAN model to derive estimates of direct, indirect, and induced impacts.

Chapter 5: Survey Logistics and Results

The major data collection component of this study involved two surveys, which ascertained data on different stakeholders that influence the economic impact of GLTC in the Lynchburg region. The on-board bus rider survey collected data on alternative travel options and transit trip purposes and expenditures. The employee survey contributed information regarding GLTC as an employer and the spending patterns of its employees. Data was also collected on other stakeholder groups, including social service agencies, vendors to GLTC, and major employers in Lynchburg, through different methods.

Surveys were originally considered to garner information from social service agencies, vendors, and employers. However, an insufficient number of respondents was identified within each group, so informal interviews were used instead. Informal interviews were conducted with social service agencies to help determine the value of the transit services to these agencies. GLTC was able to provide a detailed listing of purchases from vendors, contractors, and suppliers in the last three years. Informal telephone follow-ups with some of the vendors provided more detail regarding their transactions with GLTC and the potential impacts if these commercial transactions ceased. Telephone interviews with several major employers in Lynchburg were also conducted. However, few employers were able to provide detailed information regarding their employees' travel patterns and transit use.

Developing and administering the survey was a collaborative effort between Jack Faucett Associates, KFH Group, and GLTC. The surveys underwent a number of iterations where content and formatting were examined to ensure that the surveys were user-friendly and provided the data needed to evaluate GLTC's economic impacts. The bus rider survey in particular was tailored to capture additional data from students that use GLTC services at Liberty University and other higher education institutions in the area.

The following sections describe the logistics of implementing the surveys, provide more details on survey content and response rates, and outline other relevant data collection.

5.1 Bus Rider Survey

With significant experience in conducting surveys related to transit riders and operations, KFH Group led the development of the on-board rider survey. This survey was distributed to existing GLTC riders on both the fixed route and paratransit services to capture the destinations, trip purposes, and expenditures associated with their transit travel. Information about alternatives to transit and impacts if GLTC service was not available was also collected. A copy of the on-board rider survey can be found in Exhibit 5-1.

Exhibit 5-1: Bus Rider Survey

**Greater Lynchburg Transit Company (GLTC)
and Liberty University (LU) Transit Services**

**ON-BOARD RIDER SURVEY**

GLTC and LU Transit Services are conducting a study to estimate the value of the transit system to the local community. We would appreciate it if you would take a few minutes during your bus trip to complete this rider survey. **Please return it to the driver when you get off the bus.** If you need additional time to complete the survey, please return it to a driver during your next trip or mail to: GLTC, PO Box 797, Lynchburg, VA 24505-0797. If you have already filled out a survey today, you do not need to fill this out again. Thank you.

1. Do you **live** in the Greater Lynchburg area? *(If yes, please check the jurisdiction, or specify Other.)*
☐ (1) City of Lynchburg ☐ (3) Bedford County ☐ (5) Appomattox County
☐ (2) Amherst County/Madison Heights ☐ (4) Campbell County ☐ (6) Other: _____
2. Where do you **work** or go to **school**?
☐ (1) City of Lynchburg ☐ (3) Bedford County ☐ (5) Appomattox County
☐ (2) Amherst County/Madison Heights ☐ (4) Campbell County ☐ (6) Other: _____
3. What is the **purpose** of your trip today?
☐ (1) Work ☐ (4) Shopping ☐ (7) Medical
☐ (2) School ☐ (5) Dining/Eating Out ☐ (8) Visit Government Office
☐ (3) Social Service ☐ (6) Social/Recreation ☐ (9) Other: _____
4. Did you take the bus today to go to: *(please check one)*
 a. ☐ (1) Downtown ☐ (2) The Plaza/Midtown ☐ (3) No *(skip to Question 5)*
 b. If the bus was not available, would you still have gone downtown or to The Plaza/midtown?
☐ (1) Yes ☐ (2) No
 c. While downtown or at The Plaza/midtown, did you do any of the following: *(check all that apply)*
☐ (1) Shop ☐ (3) Visit Government Office ☐ (5) Personal Business (Banking, etc.)
☐ (2) Dine/Eat Out ☐ (4) Medical ☐ (6) Other: _____
5. How much will you or did you spend during this trip on:
 Groceries \$_____ Dining/Eating Out \$_____ Other Merchandise \$_____
 Entertainment \$_____ Medical Services \$_____ Other Services \$_____
6. How many **one-way** trips do you generally take on the bus per week?
☐ (1) Less than once a week ☐ (2) 1-10 times a week ☐ (3) More than 10 times a week
7. If you **do not** need the bus on a regular basis, what would you be willing to pay a **year** to have it available in case you needed it as an option for guests, children, or emergencies (if your car broke down, etc.)?
☐ (1) \$0 to \$19 ☐ (3) \$50 to \$99 ☐ (5) More than \$250
☐ (2) \$20 to \$49 ☐ (4) \$100 to \$249
8. If the bus system was not available, would you still have taken this trip?
☐ (1) Yes *(go to Question 9)* ☐ (2) No *(skip to Question 10)*

(Please turn to back of page.)

9. If you **still would have taken this trip**,
- a. How would you have traveled? (*check only the most likely option*)
- ☐ (1) taken my car ☐ (3) had family member drive me ☐ (5) ridden with friend
☐ (2) taken a taxi ☐ (4) called a social service agency ☐ (6) walked/hitchhiked
- b. What is the approximate cost of traveling by this other method (taxi fare, gas, parking)? \$_____
10. If you **would not have taken this trip** without the bus system, how would this have affected you?
- ☐ (1) would not have shopped
☐ (2) would have shopped at a different time
☐ (3) would have shopped at a different location (*circle one*): In Lynchburg Outside Lynchburg
☐ (4) would not have gone to the doctors/medical appointment
☐ (5) would not have gone to work
11. Would you use the bus services more if gas prices were higher?
☐ (1) Yes (Please specify gas price per gallon considered high: \$_____) ☐ (2) No
12. If the bus services were not available, would it affect your ability to live independently?
☐ (1) Yes ☐ (2) No
13. Do you have a driver's license? ☐ (1) Yes ☐ (2) No
14. Was a car (and driver, if you don't have a license) available to you as an alternative for this trip?
☐ (1) Yes ☐ (2) No
15. If the buses were not available, would you purchase an automobile?
☐ (1) Yes ☐ (2) No
16. Are you? ☐ (1) Male ☐ (2) Female
17. How old are you? (*please check one*)
- ☐ (1) Under 12 ☐ (3) 18-24 years ☐ (5) 45-59 years
☐ (2) 12-17 years ☐ (4) 25-44 years ☐ (6) 60+ years
18. What is your current employment status?
- ☐ (1) Full-time ☐ (3) Retired ☐ (5) Student ☐ (7) Other:_____
☐ (2) Part-time ☐ (4) Unemployed ☐ (6) Homemaker
19. If you are a student,
- a. What school do you attend?
- ☐ (1) Liberty University ☐ (3) Randolph College ☐ (5) VUL ☐ (7) CVCC
☐ (2) Lynchburg College ☐ (4) Lynchburg City Schools ☐ (6) Other:_____
- b. Do you live on campus? ☐ (1) Yes ☐ (2) No
- c. Would you be able to get to class without the bus service? ☐ (1) Yes ☐ (2) No
20. Without the bus system, would you be able to continue working? ☐ (1) Yes ☐ (2) No
21. Family income: (*please check one*)
- ☐ (1) Under \$9,999 ☐ (3) \$20,000 - 29,999 ☐ (5) \$40,000 - 49,999 ☐ (7) Over \$60,000
☐ (2) \$10,000 - 19,999 ☐ (4) \$30,000 - 39,999 ☐ (6) \$50,000 - 59,999

Please make any general comments about the importance of the bus service to you:

Further details regarding the purpose, content, logistics, and results of the on-board rider survey are provided below.

Purpose

The purpose of the on-board rider survey was to help determine the value of GLTC services to riders and the local economy. The economic and social impacts of GLTC could be quantified through riders' responses in four data categories:

- The geographic location of their home, employment, and shopping destinations
- The purpose, destination, and expenditures associated with the particular trip they were on
- The level of transit dependency, including the availability of transportation alternatives and an estimated dollar value of having transit as an option
- Socioeconomic characteristics to help determine the importance of GLTC in providing access to employment and educational institutions

The purpose of the survey was to gain information about the particular trip the riders were taking, rather than their overall travel behavior. These responses provided a snapshot of a typical service day for GLTC, including data from a weekday and a weekend day, which could be aggregated using system-wide ridership to reflect annual transit impacts.

Content

Survey questions within the four data categories described above contributed information regarding two main types of economic and social impacts that GLTC has on the Lynchburg region: the provision of alternatives and travel by transit. The content of the on-board rider survey is described below in relation to these types of economic and social impacts.

Provision of Alternatives

GLTC provides travel mode alternatives for both transit dependent riders and choice riders. Transit dependent riders are those that typically do not own or operate a auto due to financial reasons, physical disabilities, or mental disabilities. Population segments that have traditionally been transit dependent include older adults, persons with disabilities, persons with low incomes, youth, and autoless households. Questions in the survey captured information about how people would change their transportation behavior in the absence of transit, the daily activities that GLTC helps transit riders access, and how transit availability affects the independence of transit riders. It was especially important to capture the need for transit service to access employment, medical care, and other essential activities to determine the economic losses that would be sustained if these opportunities could not be accessed. Determining the degree to which transit helps riders stay independent could be quantified as both a social impact, which affects a rider's quality of life, and an economic one, which potentially reduces public costs such as Medicaid related transportation.

Choice riders are those that choose to use GLTC services even though they have a personal vehicle available and are able to drive. Choice riders typically take transit due to its affordability, convenience, and relatively low impact on the environment. The survey questions were designed to help quantify the number of choice riders and the dollar value that they place in having transit service as an option. In the wake of unusually high gas prices in 2008, a question also asked if a choice rider would use transit services even more if gas prices increased and the cost level that the rider considered high for gas. These questions helped quantify the impacts of transit as a transportation alternative for occasional riders and frequent riders who have a personal vehicle available.

Travel by Transit Translated into Fewer Automobile Trips

Both individuals and society as whole benefit from transit ridership, which results in fewer automobile trips. Questions in the survey asked how the transit riders would have made their trips without transit. Responses included drive, ride with family or friends, take a taxi, and call a social service agency. These options all result in additional vehicles on the road, which contribute to more accidents, air pollution, and congestion. The lack of transit would also constitute additional costs for the drivers, taxi companies, and social service agencies. The number of additional automobile trips counted in these responses could be quantified into additional costs to users and the public for increased accidents, air pollution, and congestion.

Travel by Transit and the Direct User Benefits

Aside from the user benefits of transportation savings, other direct user benefits from transit include the ability to live and move independently, access to social interaction, and equality in terms of mobility and access to opportunities. The main user effects quantified through the survey questions were the costs of alternative transportation modes and the indirect costs of cancelling trips if transit service is no longer available.

Logistics

The on-board rider survey for fixed route services and LU Transit was performed on Thursday, April 23, 2009, and Saturday, April 25, 2009. The purpose of these dates was to capture a typical weekday and weekend day of GLTC service, and also to survey students at LU while the academic semester was in session. The on-board rider survey for paratransit services was conducted from Wednesday, October 21 to Friday, October 23, 2009. A longer time frame was considered for paratransit due to its relatively lower ridership.

Results

A total of 1,202 surveys were collected. The distribution of surveys collected by service and day the survey was administered is provided in Exhibit 5-2.

Exhibit 5-2: Distribution of Bus Rider Surveys Collected

Service	Day Survey was Administered	Number of Surveys Collected
Fixed Route	Thursday	417
Fixed Route	Saturday	120
Paratransit	Wednesday to Friday	32
LU	Thursday	479
LU	Saturday	154

All GLTC services have more riders on weekdays than weekends. However, the Saturday response rate may be even lower than expected, because some Saturday riders may have completed the survey on Thursday and the riders were instructed to complete the survey only once.

A total of 32 on-board rider surveys were collected for the paratransit service.¹³ GLTC has an average of 80 paratransit riders per week. The response rate for the paratransit on-board rider survey represents about 40 percent of the average weekly ridership.

5.2 Employee Survey

The employee survey was designed to gather information about the actions that employees would take if they were not employed at GLTC. GLTC staff were able to provide payroll data and the employees' addresses. This information was used in conjunction with the employee survey to estimate employee spending in the Lynchburg region.

Purpose

The purpose of the employee survey was to gathered information about what employees and the working members of their households would do if GLTC did not exist as an employer (e.g., find another job in or outside the Lynchburg area, retire, no longer work). Questions also asked whether family members work and whether the employee owns or rents their home because these factors may influence an employee's decision to stay in Lynchburg or move if they were not employed at GLTC. Other questions collected information on employee expenditures in the Lynchburg area and asked for estimates of spending on housing, shopping, entertainment, and other goods and services. Using information about the employees' jurisdiction of residence, the responses helped quantify GLTC's impacts on Lynchburg's economy. The survey was also used to determine the indirect impacts of spending by GLTC employees and their households.

¹³ 36 physical paratransit rider surveys were actually collected, but four could not be tabulated due to lack of responses or invalid responses, so the total number included in the analysis was 32 paratransit rider surveys.

Logistics

The survey responses were anonymous to help the employees feel more comfortable in providing personal data. The surveys were distributed with employee pay stubs, which the employees must come into the office to collect from the dispatcher every month. The surveys were attached to the May 2009 pay stubs, and the employees were asked to return the completed surveys to the dispatcher or mail them back to Jack Faucett Associates within two weeks.

Results

Sixty surveys were completed and submitted as part of the employee survey. These completed surveys represent about 53 percent of GLTC's staff. Some employees declined to provide detailed personal information, such as the value of their homes, property taxes, or monthly rent. Nevertheless, the analysis was conducted with the information available, taking into consideration non-responses when tabulating the results. A copy of the employee survey is shown in Exhibit 5-3

Exhibit 5-3: Employee Survey**ALL RESPONSES ARE CONFIDENTIAL. PLEASE DO NOT INCLUDE YOUR NAME**

1. Where do you live?

☐ (1) City of Lynchburg ☐ (4) Bedford County ☐ (7) Other: _____☐ (2) Amherst County ☐ (5) Campbell County☐ (3) Madison Heights ☐ (6) Appomattox County

2. Which cities or counties from the options listed in question 1 do you do the following activities in?

a. Buy groceries _____

b. Other shopping _____

c. Entertainment _____

d. Dine _____

e. Receive health care _____

3. Do you own your rent your home?

☐ (1) Own ☐ (2) Rent

4. If you own your home, what is the value of your house? _____

5. If you own your home, what is the value of your property taxes? _____

6. If you rent, what is your rent per month? _____

7. If you didn't work for the GLTC? Which of the following would you most likely do?

☐ (1) Find another job in the GLTC service area (Lynchburg or Madison Heights)☐ (2) Find another job outside Lynchburg or Madison Heights but not relocate☐ (3) Find another job and relocate outside the GLTC service area☐ (4) Retire☐ (5) No longer work☐ (6) Other _____

8. Do other members of your household work outside the home?

☐ (1) Yes ☐ (2) No

9. If you stopped working for the GLTC and chose to relocate from the Lynchburg and Madison Heights area as a result, would the other working members of your household relocate with you?

☐ (1) Yes ☐ (2) No ☐ (3) NA

10. On average, how much do you and your family spend in the GLTC service area (Lynchburg and Madison Heights) per month:

Groceries \$ _____

Clothing/Other Merchandise \$ _____

Entertainment \$ _____

Dinning Out/Carry Out \$ _____

Rent/Mortgage \$ _____

5.3 Informal Interviews with Social Service Agencies

GLTC currently does not contract with any social service agencies to provide services, so a full survey of social service agencies was not conducted. However, the clients of social service agencies and community organizations do use GLTC's services to access the agencies within Lynchburg and in Madison Heights. Examples of such agencies include the City Department of Social Services, Salvation Army, Lynchburg Community Action Group, and Interfaith Outreach Association. The consultant staff had an informal interview with staff at the City Department of Social Services (DSS) to discuss how GLTC service impacts DSS. GLTC bus routes 1A and 1B currently stop very close to the DSS office on Commerce Street at Ninth Street. DSS staff estimated that 30 percent of clients use transit service to reach the DSS office. DSS gets about 60,000 visits a year, including repeat visits, which translates into about 18,000 client trips via transit annually.

Chapter 6: Economic Impacts

The purpose of this chapter is to provide the specifics of the data analysis and data sources used to calculate the economic impacts of the GLTC system. This chapter strives to provide a complete and clear description of the exact calculations, so the study results can be both understood and replicated. This chapter is divided into sections that describe different economic impacts created by GLTC. Travel impacts and supply impacts are considered first, both because they are believed to be the more significant impacts and the most readily quantifiable. Analysis of the land use and option impacts are provided next. A final section develops estimates of total wages and spending by transit patrons for use in measuring gross spending power. A list of the economic impacts examined in this chapter is provided below:

Travel Impacts:

- Costs for Transit Users Switching to Alternative Modes
- Costs of Cancelled Trips
- Avoided Externalities
 - Accidents
 - Air Pollution
 - Congestion Impacts

Supply Impacts:

- GLTC Employment
- GLTC Purchases
- GLTC Capital Expenditures

Land Use Impacts:

- Erosion of Downtown Areas

Option Impacts:

- Transit as an Option
- Transit as a Means for Independent Living

Gross Spending Power Impacts:

- Gross Wages and Spending by Transit Patrons

6.1 Costs for Transit Users Switching to Alternative Modes

The costs for transit users switching to alternative modes and the costs of cancelled trips are calculated using a similar methodology. If GLTC services were not available, local residents would either choose alternative forms of transportation or cancel trips. Each of these options has

a cost. To estimate the cost to the region of these two options a set of calculations were performed. First, based on responses to the bus rider survey, total transit passenger miles were divided among those who would travel via alternative transportation modes and those who would cancel their trip in the absence of GLTC. For those who would travel via alternative modes, the alternative modes of transportation they would use was determined. For those who would cancel their trip, the purpose of their trips was determined. These disaggregations were then applied to passenger miles that were replaced by alternative transportation modes or passenger miles that were no longer traveled due to cancelled trips. Next, costs per mile for alternative means of transportation and a value per cancelled trip by trip purpose were determined from survey results and secondary data sources. Passenger miles, costs per mile for alternative modes of transportation, and a monetary value for each type of cancelled trip were then all converted to a per trip basis using the average passenger trip length by transit service provided by GLTC. Lastly, the cost per trip by an alternative transportation mode was multiplied by the number of trips made via alternative modes of transportation and the value of cancelled trips by type was multiplied by the number of relevant cancelled trips. The following sections provide a detailed explanation of these calculations.

Number of Trips By Type

To reflect the differences in bus ridership patterns between weekday and weekend riders a distinction between the two parts of the week was included as part of the analysis. Using data provided by GLTC staff, passenger trips by service type were converted to weekday and weekend trips based on average ridership by day of the week between January and November 2009 for the fixed route service and the month of September 2009 for LU riders. Paratransit weekday and weekend trips were based on the same ratio of weekday to weekend riders as the fixed route service. GLTC staff estimate fixed route trips to be 6.5 miles per passenger. Paratransit and Liberty University trips were estimated to be 6.2 miles and 1.1 miles per passenger respectively.¹⁴ GLTC passenger trips and average trip lengths in fiscal year 2009 by service type are provided in Exhibit 6-1.

Exhibit 6-1: GLTC Passenger Statistics in Fiscal Year 2009

Service	Total Passenger Trips	Weekday Passenger Trips	Weekend Passenger Trips	Average trip length
City Fixed Route	1,116,646	953,075	163,571	6.5
Paratransit	14,630	12,487	2,143	6.2
LU Transit	1,933,534	1,851,181	82,353	1.1
Total	3,064,810	2,816,743	248,067	NA

Next, the percent of bus riders who would use an alternative transportation mode or cancel a trip was determined. If a bus rider indicated in the survey that they would use an alternative transportation mode, they were asked what transportation mode they would most likely use (survey question 9). If a bus rider indicated they would cancel their trip, they were asked what was the purpose of their trip (survey questions 2 and 8). The percentage breakdown of the responses in the bus rider survey is provided in Exhibit 6-2.

¹⁴ GLTC provided data. Email from Scott Willis, GLTC Deputy Manager, on 10/20/09.

Exhibit 6-2: Survey Responders Who Use Alternative Transportation or Cancel Trip (%)

	Alternative Transportation Mode or Trip Purpose	Fixed Route Weekday	Fixed Route Weekend	Paratransit	Liberty University Weekday	Liberty University Weekend
Would use alternative transportation mode	Take existing auto	4	3	11	16	12
	Ride with family	13	10	0	1	2
	Ride with friend	11	7	23	2	2
	Taxi	1	2	11	0	1
	Call social service agency	10	9	17	7	7
	Walk or hitchhike	12	14	6	56	44
	Subtotal	51	45	69	81	67
Would cancel trip	Medical	5	7	14	0	0
	School	8	5	3	16	24
	Shopping	5	13	3	1	2
	Social Service	2	2	3	0	0
	Social / Recreational	5	9	6	0	3
	Work	17	12	3	1	1
	Government Office Visit	1	3	0	0	0
	Dining	3	2	0	0	3
	Other	3	2	0	0	0
	Subtotal	49	55	31	19	33
Total		100	100	100	100	100

Source: GLTC bus rider survey

The behavior changes expected in the absence of transit seem logical and expected, which may be an indicator of the robustness of the survey. For example, there are more student trips on LU buses than city fixed route and paratransit buses. City fixed route buses have a high number of work trips relative to paratransit and LU buses.

City fixed route buses have more weekday work trips than weekend work trips. Another observed difference between weekday and weekend bus riders is weekday riders are more likely to use an alternative transportation mode than weekend riders. For example, 51 percent of fixed route weekday riders would use an alternative transportation mode, whereas only 45 percent of fixed route weekend riders would. LU bus riders observe the same trend. Due to the small number of paratransit riders only weekday riders were surveyed. Other observed differences include that there are more cancelled work trips on weekdays than weekends and more cancelled shopping trips on weekends than weekdays.

The percentages in the Exhibit 6-2 were applied to the weekday and weekend passenger trips in Exhibit 6-1 to allocate the passenger miles according to the actions bus riders would take in the absence of GLTC services. Exhibit 6-3 provides the results of the procedure.

Exhibit 6-3: Passenger Miles Allocated by Service and Passenger Responses

	Alternative Transportation Mode or Trip Purpose	Fixed Route Weekday	Fixed Route Weekend	Paratransit	Liberty University Weekday	Liberty University Weekend
Would use alternative transportation mode	Take existing auto	263,912	32,714	10,366	315,904	10,728
	Ride with family	805,626	106,321	0	17,076	1,788
	Ride with friend	666,725	73,607	20,733	34,152	1,788
	Taxi	41,670	24,536	10,366	4,269	596
	Call social service agency	625,055	98,143	15,550	149,414	5,960
	Walk or hitchhike	750,065	147,214	5,183	1,131,277	39,930
Would cancel trip	Medical	333,362	73,607	12,958	0	0
	School	500,044	49,071	2,592	328,711	22,051
	Shopping	319,472	139,036	2,592	12,807	1,788
	Social Service	138,901	16,357	2,592	4,269	0
	Social / Recreational	291,692	98,143	5,183	8,538	2,384
	Work	1,041,758	122,679	2,592	21,345	1,192
	Government Office Visit	69,451	32,714	0	0	0
	Dining	166,681	24,536	0	8,538	2,384
	Other	180,571	24,536	0	0	0
Total		6,194,985	1,063,214	90,706	2,036,299	90,588

Trip Costs for Alternate Modes

For trips where an alternative mode of transportation would be taken, the cost per trip for each alternative mode was calculated. Aside from the bus service, other potential means of transportation available to bus riders potentially include:

- Automobile
 - Purchase automobile
 - Take existing automobile
 - Ride with family
 - Ride with friend
- Taxi
- Social service agency transportation service
- Walk or hitchhike

The trip costs for each of the alternate modes were estimated using a variety of sources. Estimates of per trip costs were then multiplied by the estimates of the number of trips by type to estimate the total cost of replacement trips.

The cost of a trip for alternative transportation modes is sometimes most accurately measured on a per mile basis and other times on a per trip basis. To estimate the cost of alternative transportation modes that are best measured on a per mile basis, it is necessary to determine the average trip length of a replaced bus trip. Average trip length per bus passenger were estimated from data in the National Transit Database and from estimates provided by GLTC staff. Using these two sources, the average trip length by type of bus service was estimated as follows:

- City fixed route: 6.5 miles
- Paratransit: 6.2 miles
- LU Transit: 1.1 miles

The cost of alternate means of transportation to the bus service that were estimated on a per mile basis include:

- Personal automobile
- Ride with family
- Ride with friend
- Social service agency transportation service

The remaining costs of alternative means of transportation were estimated on a per trip basis. The following sections examine the cost of various alternative transportation options.

Private Vehicle Trips

Automobile costs consist of both operating and ownership costs. Newly purchased automobiles were assumed to involve both types of costs. Using an existing car or traveling with a relative or friend was assumed to involve only operating costs, since the fixed costs for these automobiles has already been paid for in full. The cost of replacement trips by automobile were estimated based on the Internal Revenue Service (IRS) 2010 Standard Mileage Rates.¹⁵ The IRS cost estimates are based on an annual study of the fixed and variable costs of operating an automobile. The standard mileage rate for the IRS's "business" category includes fixed and variable costs of operating an automobile and the rate for the IRS's "medical and moving purposes" category only includes variable costs. The IRS standard mileage rate for the business category is used to estimate the cost per mile of a new automobile purchased, since this estimate includes fixed costs associated with vehicle financing and variable costs associated with operating the vehicle. The IRS standard mileage rate for the "medical and moving purposes" category is used to estimate the cost per mile of taking an existing auto, riding with a family member, or riding with a friend. The "medical and moving purposes" category is used for these estimates because it only includes variable costs associated with operating the vehicle, such as gasoline and vehicle maintenance.

For personal automobiles, it was assumed that average trip length was identical to the estimated average trips lengths provided by the bus service for the different transit services. For family rides, trip length were increased to 1.5 times the bus mileage. Half of the rides provided by family members are assumed to require a round-trip were a family member would drop the individual off and return home. For rides with friends, trip lengths were decreased to three quarters of the bus mileage. Half of the rides with friends are assumed to involve sharing a ride to the same or a nearby destination. An example would be a carpooling arrangement to work where a fellow worker would only go a short way off their ordinary route.

¹⁵ IRS, 2010 Standard Mileage Rates. Available at <http://www.irs.gov/newsroom/article/0,,id=216048,00.html>

Taxi

Lynchburg City Code Section 37-109 outlines rates for taxicabs. Trip rates are largely determined by mileage. The first ninth of a mile is \$1.80 and each ninth of a mile after that is \$0.25. There is also a \$1.00 fuel cost surcharge added to the meter charge for every trip. This analysis assumes no tip is paid to cab drivers. Due to the fixed charge for the first ninth of a mile and fuel surcharge, an average taxi trip cost per mile cannot be practically determined. However, the average taxi trip cost can be calculated for specific trip distances. Assuming the average passenger travels the same distance whether they travel by bus or taxi, it is possible to develop a taxi trip cost for a fixed trip lengths.

Social Service Transportation Service

For trips where it was indicated that the rider would call on a social service agency it was assumed that a social service agency would provide transportation services. The Lynchburg Community Action Group, Inc., (Lyn-CAG), a local non-profit and anti-poverty agency providing emergency assistance, training, and education to help low-income clients, refers clients that need transportation assistance to two private businesses: BNF Express and White's Transportation. BNF Express charges clients approximately \$1 per mile. White's Transportation were unable to provide a rate per mile. For the purposes of this study, an estimate of \$1 per mile was used to estimate the cost of a trip made using social service transportation services.

Walk or Hitchhike

Transit trips that are replaced by walking or hitchhiking do not involve monetary costs. However, they do involve substantial non-monetary costs to the individual in terms of time, inconvenience, physical effort, and risk. Individuals who indicated they would walk, currently prefer the cost of the transit trip to this alternative, otherwise they would have walked rather than take the bus. Based on this observation, walking or hitchhiking is assumed to lower these individual's well being by at least the cost of the transit fares. This represents a conservative assumption as the cost for some trips will be much higher. The fixed route GLTC fare is \$1.50 per trip and the paratransit fare is \$3.00 per trip. These values were used to estimate the cost of transit trips that would be replaced by walking or hitchhiking for non-LU Transit trips. The cost of LU Transit trips was estimated by dividing the total fees transportation LU students pay per year, which is \$150 per student, by 1.9 million LU Transit trips to derive a cost per trip estimate of \$0.52.

Exhibit 6-4 provides average trip cost per mile, the adjusted average trip length, and trip cost for each alternative method of travel. Estimates are provided separately for fixed route, paratransit, and LU bus services. The cost per mile and trip for weekday and weekday trips is assumed to be the same.

Exhibit 6-4: Replacement Trip Lengths and Corresponding Costs

Alternative Transportation Mode or Trip Purpose	Trip Cost per Mile	Fixed Route Average Trip Length (Miles)	Paratransit Average Trip Length (Miles)	LU Route Average Trip Length (Miles)	Fixed Route Trip Cost	Paratransit Trip Cost	LU Route Trip Cost
Newly purchased auto	\$0.50	6.5	6.2	1.1	\$3.25	\$3.10	\$0.55
Take existing auto	\$0.17	6.5	6.2	1.1	\$1.07	\$1.02	\$0.18
Ride with family	\$0.17	9.8	9.3	1.7	\$1.61	\$1.53	\$0.27
Ride with friend	\$0.17	4.9	4.7	0.8	\$0.80	\$0.77	\$0.14
Taxi	NA	6.5	6.2	1.1	\$16.63	\$15.95	\$4.48
Call social service agency	\$1.00	6.5	6.2	1.1	\$6.50	\$6.20	\$1.10
Walk or hitchhike	NA	6.5	6.2	1.1	\$1.50	\$1.50	\$0.52

The final step in calculating the cost of replacing transit trips was to multiply the cost per trip estimates for each alternative mode by the number of trips that will be replaced by that mode. Exhibit 6-5 provides the estimates of the total costs of replacing transit trips.

Exhibit 6-5: Total Costs of Replaced Transit Trips by Alternate Mode (\$)

Alternative Transportation Mode or Trip Purpose	Fixed Route Weekday	Fixed Route Weekend	Paratransit	Liberty University Weekday	Liberty University Weekend	Total
Take existing auto	43,545	5,398	1,710	52,124	1,770	104,548
Ride with family	199,392	26,315	0	4,226	443	230,376
Ride with friend	82,507	9,109	2,566	4,226	221	98,629
Taxi	106,580	62,755	26,668	17,367	2,425	215,794
Call social service agency	625,055	98,143	15,550	149,414	5,960	894,121
Walk or hitchhike	173,092	33,973	1,254	539,659	19,048	767,026
Total	1,230,171	235,691	47,748	767,017	29,866	2,310,494

Economic Effect of Replaced Trips

Just as spending on transit provides economic benefits to the Lynchburg region, so does spending on alternative forms of transportation. Without transit, more automobiles would be bought and more would be spent on vehicle operating costs such as gasoline. Taxi ridership would also increase, resulting in increased income and employment for local taxi companies. This spending would also ripple through the local economy creating additional employment and income. However, because transit riders are spending more on transportation, they will have less money to spend on other items such as food, clothing, and housing. Overall, it is likely that less of the expenditures on automobiles and gasoline will stay in the area than the expenditures on food, clothing, and housing. This is because automobiles and gasoline are not made in the local area. On the other hand, it is also likely that total spending would rise as savings are spent to keep up with higher transportation costs in the absence of transit. Since these two factors are offsetting, it is assumed that the economic effects of spending by transit patrons are essentially equal under both sets of conditions. However, transit patrons are clearly worse off by having to devote a much larger portion of their income to transportation. Higher transportation costs would likely require a reduction on spending for basic needs for many riders.

6.2 Economic and Social Cost of Foregone Trips

The expenditures, wages, and impacts associated with canceled trips were determined by establishing a per trip monetary estimate for each trip purpose and applying those values to the number of transit trips that would be canceled in the absence of GLTC. The total values for each trip purpose were then adjusted using economic multipliers to represent the economic impact of the canceled expenditures and reduced income to the region.

The Per Trip Value of Foregone Trips

The per trip value of foregone trips were calculated based on the survey responses whenever possible. When there was insufficient information to use the survey data, secondary sources were used to develop estimates. Foregone trip values were developed for nine categories of trips:

- Medical
- School
- Shopping
- Social Service
- Social / Recreational
- Work
- Governmental Office Visit
- Dining
- Other

The following per trip values were estimated from the survey results:

- Medical
- Shopping
- Social / Recreational
- Dining
- Other

The following per trip values were estimated using secondary data sources:

- School
- Social Services
- Government Office Visit

Work trip values were estimated using survey results for fixed route and paratransit bus riders and were estimated with secondary data for LU bus riders.

Trip values calculated from the survey results were estimated from question number five in the bus rider survey, which asked respondents, “How much will you or did you spend during your trip.” Values from the survey data were tabulated using the spending by category of individuals

who would cancel their trip in the absence of GLTC. The total amount spent in each category by these bus riders was divided by the number of people who provided an estimate of spending for the respective category to develop a cancelled trip value. Exhibit 6-6 summarizes the per trip expenditures, income, or value that would be lost if individuals would choose to cancel a trip in the absence of transit service.

Exhibit 6-6: Value of a Cancelled One Way Transit Trip (\$)

Purpose of Trip	Fixed Route Trip Cost Weekday	Fixed Route Trip Cost Weekend	Paratransit Trip Cost	Liberty University Weekday	Liberty University Weekend
Medical	19.17	14.67	15.00	10.00	12.00
School	8.28	8.28	8.28	1.55	1.55
Shopping	33.73	19.56	15.00	27.50	13.75
Social Service	6.50	6.50	6.20	1.10	1.10
Social / Recreational	8.17	11.46	8.17	8.00	7.50
Work	22.33	21.65	13.97	18.85	18.85
Government Office Visit	6.50	6.50	6.20	1.10	1.10
Dining	6.73	6.11	6.11	6.22	6.69
Other	20.47	15.50	5.00	5.75	5.75

The methodology used to develop estimates for foregone trip values that were not estimated from the survey, but instead relied on secondary sources are described below.

School

The term school was used in the survey to refer to institutions of higher education. Colleges and universities in Lynchburg include Central Virginia Community College, Liberty University, Lynchburg College, Randolph College, and Virginia University of Lynchburg. The value of a school trip could not be monetized based on the survey results. Therefore, tuition was assumed to be a reasonable indicator of the value of education. However, tuition rates vary among the colleges and universities in Lynchburg and the surrounding area. For example, tuition for the 2008 to 2009 academic year at Central Virginia Community College was \$2,675 for in-state students¹⁶ and at LU was \$18,698 for all students.¹⁷

Due to large differences in tuition rates at different schools, two separate school trip values were estimated, one estimate was developed for LU and another estimate was developed for all other schools. At schools other than LU, tuition was estimated at \$2,484 based on the average annual tuition rate charged for full-time students at a two-year college during the 2007 to 2008 academic year according to the U.S. Department of Education.¹⁸ This estimate includes a reasonable mix of vocational institutions, colleges, and other types of schools that Lynchburg residents may

¹⁶ College View. "Central Virginia Community College." Available at http://www.collegeview.com/school/school_hub.jsp?scid=3301321

¹⁷ Lynchburg University website. *Tuition and Financial Aid*. Available at <https://www.lyncburg.edu/financialaid.xml>

¹⁸ U.S. Department of Education, National Center for Education Statistics, *Digest of Education Statistics 2008*. Available at http://nces.ed.gov/programs/digest/d08/tables/dt08_332.asp

attend. This figure was divided by the number of school days in an academic year, estimated to be 150 days, to derive a school value of \$16.56 per day. This daily rate was divided by two to convert it to a one-way trip estimate of \$8.28.

The value of a school trip for LU students was not estimated based on the university's tuition rates. Tuition was not used to measure the value of an LU school trip because the university would probably run its own transit service, as it had done in the past, if they did not have a service contract with GLTC. Therefore, instead of being based on tuition, the value of a LU school trip was estimated by dividing the total value of student transportation fees (\$3.0 million) by the number of student trips (1.9 million) per year. This calculation results in a LU school trip value of \$1.55.

Social Service

Social service trips could not be monetized based on the bus rider survey results. In general, these trips do not involve expenditures on the part of participants that can be used to monetize the value of these activities. Due to this fact, social service trips were valued at the average transit fare according to type of transit service. Individuals who participated in social service programs were willing to pay the transit fare to participate. Therefore, the fare represents an estimate of the minimum value bus riders place on these activities.

Government Office Visit

Government office visits could not be monetized based on the bus rider survey results. These trips do not involve expenditures on the part of participants that can be used to monetize the value of these activities. Accordingly, government office visits were valued at average transit fares. Individuals who participated in these programs were willing to pay the transit fare to participate. Therefore, the fare represents an estimate of the minimum value bus riders place on these activities.

Work

Estimates of lost wages were based on the income of the average non-LU transit rider reported in the bus rider survey minus an estimate of public assistance payments. Public assistance payments were considered because many transit riders would be eligible for public assistance if they could not work. Survey respondents were asked to provide their income according to income ranges. To calculate an average income the number of respondents in each income range category were multiplied by the midpoint of the income range. The results were then summed to generate total income for all riders. This value was then divided by the total number of respondents who answered the question. Average public assistance from the Temporary Assistance for Needy Families (TANF) and Food Stamp programs were then subtracted to derive an estimate of reduced spending power. This calculation was performed because public assistance recipients would likely continue to receive those benefits, at least in the short term, even if they stop working due to a lack of transit services. In 2008, the average qualifying Virginian received

\$1,556 per year in TANF benefits and \$1,632 per year in food stamp benefits.^{19, 20} Therefore, average total assistance per qualifying recipient is about \$3,188 per year. The public assistance values were applied to the estimated population of bus riders who meet the income requirement for such assistance.

The average annual pre-tax income of a weekday bus rider who would cancel his or her trip in the absence of GLTC is \$17,864 based on the bus rider survey. This income value accounts for public assistance benefits from TANF and the Food Stamp Program. People who made work trips were assumed to work 260 days per year and incur a 35 percent combined federal, state, and local tax rate. Based on these assumptions, the value of a one-way work trip for weekday bus riders is \$22.33. The same methodology was applied to weekend and paratransit bus riders who reported that work was the purpose of their trip. The value of a one-way weekend fixed route work trip is \$21.65. The value of a one-way work trip on paratransit is \$13.97.

Due to a lack of representative data entries, LU students that reported work as the purpose of their trip were assumed to be employed at Virginia's minimum wage of \$7.25 per hour and work four hours a day on days that they worked. A 35 percent combined federal, state, and local tax rate was applied to the income estimates. Accordingly, the value of a one-way work purpose trip for an LU student is estimated to be \$18.85.

The Total Economic Impact of Foregone Trips

Once the one-way trip values were estimated, they were multiplied by the total number of canceled trips by purpose to provide a total value of canceled trips. The results of this analysis are provided in Exhibit 6-7. The initial economic impact of foregone trips is about \$11 million.

Exhibit 6-7: Value of a Canceled Transit Trip (\$)

Purpose of Trip	Fixed Route Weekday	Fixed Route Weekend	Paratransit	Liberty University Weekday	Liberty University Weekend	Value of Cancelled Trips
Medical	982,992	166,088	31,350	0	0	1,180,430
School	636,979	62,509	3,461	463,650	31,103	1,197,703
Shopping	1,657,730	418,365	6,270	320,173	22,349	2,424,887
Social Service	138,901	16,357	2,592	4,269	0	162,119
Social / Recreational	366,485	173,008	6,827	62,094	16,254	624,668
Work	3,578,754	408,633	5,841	365,773	20,426	4,379,426
Government Office Visit	69,451	32,714	0	0	0	102,165
Dining	172,517	23,077	0	48,268	14,493	258,356
Other	568,722	58,508	0	0	0	627,231
Total	8,172,531	1,359,261	56,341	1,264,228	104,625	10,956,985

¹⁹ Center on Budget and Policy Priorities, *TANF Benefits Are Low And Have Not Kept Pace With Inflation*, (November 24, 2008), available at <http://www.cbpp.org/pdf/11-24-08tanf.pdf>

²⁰ The Women's Legal Defense and Education Fund, *Meager and Diminishing Welfare Benefits Perpetuate Widespread Material Hardship for Poor Women and Children*. (July 30, 2009), available at <http://www.legalmomentum.org/assets/pdfs/tanf-meager-benefits.pdf>

The economic impact estimates of total values by purpose of trip were then adjusted using economic multipliers to reflect the direct, indirect, and induced impacts on the region. For the lost income associated with work trips, this is an upward adjustment to reflect the ripple effect as this income is spent and re-spent through the local economy. For the other activities the adjustment is downward as this ripple effect is offset by the portion of the value of the purchased goods that are made outside the area.

The economic model used to measure economic impacts in this study is the IMPLAN input-output model. The economic multipliers applied to the different trip purposes vary based on the type of industry involved. For example, canceled work trips involve lost personal income and were assigned to household spending categories. For the other trip types, shopping was assigned to retail trade, social/recreational trips to the eating and drinking establishments sector, medical to the health services industry, and all other trip types to the miscellaneous services industry. Exhibit 6-8 provides the estimates of the value of output, employment, labor income, and total value added of trips that would cease without transit.

Exhibit 6-8: Value of a Canceled Transit Trip (\$)

Impact Type	Output	Employment (Full Time Job Equivalents)	Labor Income	Total Value Added
Direct	9,742,185	142	6,066,052	7,435,788
Indirect	1,645,310	14	579,690	940,178
Induced	2,759,911	26	917,223	1,646,123
Total	14,147,405	183	7,562,966	10,022,099

6.3 Avoided Externalities

Many of the bus riders who would use alternative modes of transportation in the absence of GLTC would switch over to travel in a personal car. These former bus riders will transfer the passenger miles they travel on a bus to passenger miles in a car. Additionally, these former bus riders will likely go on more automobile trips due to the convenience and access provided by car travel. This additional travel, beyond what is replaced by the switch from the bus to car travel, is referred to as induced travel. On a per passenger mile basis, traveling in a bus causes fewer accidents, less air pollution, and less congestion than traveling in an automobile. Accordingly, in the absence of GLTC, the replaced and induced passenger miles generated by travel in cars would likely increase accidents, pollution, and congestion in the Lynchburg region.

The methodology to measure the impacts of accidents, air pollution, and congestion was a multistep process. The first step was to determine the number of new cars that would likely be purchased and the number of miles they would drive in the absence of GLTC. The second step was to apply the marginal accident, air pollution, and congestion cost per mile for miles switching bus to automobile. The third step was to apply the full car cost per mile for accident, air pollution, and congestion to induced miles.

Number of Automobiles Purchased in Absence of Transit

To estimate the number of vehicles purchased in the absence of GLTC the following methodology was used. The percent of survey responders who stated they would purchase a car

in the absence of GLTC was calculated. That percent was then multiplied by total passenger miles to determine the total passenger miles attributed to people who would purchase a car in the absence of GLTC. Those passenger miles were then divided by the average length of a trip to convert them to trips per year. Total trips per year were then divided by the average number of bus trips taken per year by transit riders to determine the number of cars that would likely be purchased. The results are provided in Exhibit 6-9.

Exhibit 6-9: Number of Vehicles that Would be Purchased Without GLTC

	Fixed Route Weekday	Fixed Route Weekend	Paratransit	Liberty University Weekday	Liberty University Weekend	Total
Percent of Survey Responders Who Would Purchase Car in Absence of GLTC	35	38	8	36	42	NA
Transit Passenger Miles Represented By Responders Who Would Purchase Car	2,168,988	398,705	7,559	735,448	38,235	NA
Passenger Miles of Car Purchasers Converted to Trips	333,690	61,339	1,219	668,589	34,759	NA
Average number of bus trips per year by transit rider	300	318	264	290	294	NA
Number of cars that would be purchased	1,112	193	5	2,308	118	3,736

Miles Driven by Vehicles Purchased in Absence of Transit

It is assumed newly purchased cars will be driven the same number of miles as various national estimates of average vehicle miles traveled in the U.S. The Federal Highway Administration (FHWA) estimates the average vehicle is driven 12,293 miles per year. This rate, which applies to all light duty vehicles in the nation, was applied to city fixed route and paratransit riders who switch to car travel.²¹ This rate was not applied to LU Transit riders, because young people tend to drive less than older adults. Instead, the FHWA estimate for vehicle miles traveled by 16 to 19 year olds, which is 4,486 miles per year, was used for LU Transit riders.²²

Vehicle miles traveled by former bus riders can be classified as either replacement or induced miles. Replacement miles replace miles formerly traveled on buses. Induced miles are additional miles traveled by former bus passengers due to the convenience and access provided by cars. The average miles traveled by a bus passenger per year is determined by dividing the transit passenger miles represented by responders who would purchase a car by the average number of bus trips per year per transit rider. For fixed route weekday bus riders this value is 7,226 miles. These miles represent replaced miles. Induced miles are estimated by subtracting the average number of miles driven in the average vehicle (i.e. 12,293 miles per year) by the replaced transit miles. As shown in Exhibit 6-10, the average induced miles traveled by fixed route weekday riders who purchase vehicles would be 5,067 miles.

²¹ Federal Highway Administration, Highway Statistics 2007, Annual Vehicle Distance Traveled in Miles and Related Data. Available at <http://www.fhwa.dot.gov/policyinformation/statistics/2007/vm1.cfm>

²² Federal Highway Administration, National Household Transportation Survey 2001. Available at <http://nhts.ornl.gov/>

Exhibit 6-10: Replaced and Induced Miles Per Vehicle

	Fixed Route Weekday	Fixed Route Weekend	Para - transit	Liberty University Weekday	Liberty University Weekend
Replaced miles (Average transit miles traveled per passenger)	7,226	1,254	29	2,539	130
Induced miles	5,067	11,039	12,264	1,947	4,356

The results of applying replaced and induced miles per vehicle to the number of vehicles likely to be purchased in the absence of GLTC are provided in Exhibit 6-11. These results represent the potential increase in replaced and induced miles in Lynchburg in the absence of GLTC services.

Exhibit 6-11: Replaced and Induced Miles for All Newly Purchased Vehicles

	Fixed Route Weekday	Fixed Route Weekend	Para - transit	Liberty University Weekday	Liberty University Weekend
Replaced Mileage	8,032,786	241,951	132	5,860,862	15,402
Induced Mileage	5,632,747	2,129,736	56,637	4,493,985	515,427

Impacts of Vehicles Purchased in Absence of GLTC

To calculate the marginal accident, air pollution, and congestion impacts of bus riders switching from bus to car travel, the respective cost of each of these impacts was developed for buses and cars on a per passenger mile basis. The accident, air pollution, and congestion impact costs per mile for buses and cars and the difference between the two measures are provided in Exhibit 6-12.

Exhibit 6-12: Accident, Air Pollution, and Congestion Costs Per Passenger Mile (\$)

	Bus	Car	Difference
Accidents	0.0008	0.0032	0.0024
Air Pollution	0.0007	0.0056	0.0049
Congestion	0.0005	0.0036	0.0031

Source: Victoria Transportation Policy Institute, 2009, "Evaluating Public Transit Benefit and Costs."

The respective net cost per mile of these impacts is applied to replaced miles and the full car cost per mile is applied to induced miles to determine the resulting costs of increased car use in the absence of GLTC. The results of these calculations are summarized in Exhibit 6-13.

Exhibit 6-13: Total Accident, Air Pollution, and Congestion Costs (\$)

	Fixed Route Weekday	Fixed Route Weekend	Para - transit	Liberty University Weekday	Liberty University Weekend	Total
Accidents	37,303	7,396	182	28,447	1,686	75,014
Air Pollution	70,904	13,112	318	53,885	2,962	141,180
Congestion	45,180	8,417	204	34,347	1,903	90,051
Sum	153,387	28,925	704	116,678	6,551	306,246

6.4 GLTC Employment

In the absence of GLTC services, the jobs and salaries offered by GLTC would no longer be available. Since the majority of GLTC employees live in the service area, the loss of employment will result in lower spending in the region and lower revenue and employment at local businesses. In order to calculate the potential value of these components, data on compensation paid to GLTC employees who live in the area was collected and augmented by estimates of spending in the area by employees who reside outside the service area. The results were then used to develop estimates of the economic impacts generated by the direct expenditures of employees in the service area.

It should be noted that this methodology provides an estimate of the total spending power of GLTC employees that might be tempered by several short and long term factors. In the short run, employees might file for unemployment benefits. Since these funds are paid by the state, they would still provide a benefit to the region for as long as they were payable and collected by former GLTC employees. Therefore, lost income for employees who reside in the area was assumed to be partially replaced by unemployment compensation. In addition, in the long run, many employees would find new jobs which would replace the GLTC jobs and income. In the long run, it is difficult to predict how the loss of GLTC, as an economic entity aside from its transit capacity, would impact total employment and compensation in the region. Therefore, the estimate developed here focuses on the short run impacts.

Employee Survey Data

GLTC employees were asked several questions in the employee survey that were designed to provide some insight into the long run effects. The answers revealed about 89 percent would seek to find a new job, while the remainder would either retire or no longer work. Twenty-seven percent would look outside the area for employment, although twelve percent would continue to live in the area and commute. In addition, the survey results revealed that just over 74 percent of employees owned a home and 67 percent had other members of their household who work outside the home. Local home ownership and other working household members would contribute to keeping a former employee in the area if they no longer worked for GLTC.

Employee Compensation

Data on GLTC salaries and fringe benefits were summed to provide estimates of total employee compensation. Salary and home address information for GLTC's 112 employees was provided by GLTC staff.

According to the 2009 operating budget, GLTC spent \$2.6 million on employee salaries and \$1.4 million on fringe benefits. In 2009 GLTC had 112 employees. Approximately 88 GLTC employees live in the GLTC service area and 24 live outside the area. Employees who live in the service area receive salary and fringe benefits worth about \$3.2 million. Employees who live outside the service area receive salary and fringe benefits worth about \$868 thousand.

Compensation received by employees who live outside the service area is not considered a benefit from a local perspective. However, spending within the service area by GLTC staff who live outside the service area is considered a benefit from a local perspective. To estimate the value of such spending, GLTC staff members who took the employee survey were asked about the location of their home and how much their household spent in the service area on different goods and services. The average spending inside the service area reported by employees living outside the service area was \$14,844 per year. Accordingly, total spending inside the GLTC service area by employees residing outside Lynchburg equals \$356,301 annually.

Employee compensation benefits were reduced by the amount of unemployment compensation that would likely be collected if GLTC operations ceased immediately. For 2009, the average weekly unemployment benefit for Virginia residents was \$275 per week.²³ The \$275 weekly figure translates to \$14,300 per year per person. Applying the per person benefit per year to the approximately 88 GLTC employees who reside in Lynchburg and Madison Heights results in about \$1.3 million per year.

The impacts of GLTC employment were estimated using the IMPLAN input-output economic model. The IMPLAN model provides estimates of output, employment, labor income, and total value added to the local economy by GLTC employment. These estimates are detailed in Exhibit 6-14.

Exhibit 6-14: Impacts of GLTC Employment

Impact Type	Output (\$)	Employment (Full Time Job Equivalents)	Labor Income (\$)	Total Value Added (\$)
Direct	1,522,354	14.9	499,205	910,994
Indirect	367,476	3.1	130,091	215,263
Induced	266,487	2.5	88,499	158,964
Total	2,156,317	20.5	717,796	1,285,221

6.5 GLTC Expenditures

In the absence of the GLTC system, the purchases made by GLTC from area businesses will no longer exist. This will result in lower business revenue which will result in the loss of employment and employee compensation. As this employee compensation is lost, spending in the community will drop and result in further losses in employment and income.

GLTC Operating Expenditures

Summaries of GLTC's operating budget between fiscal years 2005 and 2009 were provided by GLTC staff. The fiscal year 2009 operating budget was used to measure the economic impacts of GLTC for the purposes of this study. In 2009 GLTC operating budget was about \$6.7 million. Exhibit 6-15 provides GLTC spending by category for fiscal year 2009.

²³ Virginia Employment Commission, Economic Information Services Division, 2009, <http://www.vec.virginia.gov/pdf/majchgs.pdf>

Exhibit 6-15: GLTC Operating Budget in Fiscal Year 2009

Category	Operating Budget (\$ Millions)
Labor	2.62
Fringe Benefits	1.42
Services	0.35
Materials & Supplies	1.81
Utilities	0.08
Insurance	0.23
Other	0.14
Total	6.67

Specific operating expenses within these categories were assigned to IMPLAN sectors. The operating expenditures categorized by IMPLAN sector were then run through the IMPLAN economic impact input output model to determine the effects of operating expenditures on the local economy. Labor and fringe benefits were not included in this analysis as they were examined independently in the previous section of this report. GLTC operating budget without labor and fringe benefits expenditures is equal to \$2.6 million.

GLTC Capital Expenditures

Capital expenditures constitute a portion of GLTC purchases and economic impacts. Unlike operating expenditures, capital expenditures tend to vary considerably from year to year. For example, in one year GLTC may purchase a large number of buses and in another year they may purchase none. In some years, GLTC may undertake a large construction project, such as construction of a new headquarter facility, while in other years very little construction may be undertaken.

In order to estimate the economic impact of capital expenditures an average spending per year value had to be developed. To achieve a reasonable representation of capital expenditures per year, capital expenditure estimates for 2010 to 2015 were used. GLTC expects to build a new headquarter and downtown plaza facility during this period. Accordingly, these major upcoming capital expenditures were included in the analysis. The data were collected from the GLTC Capital Improvement Plan that provides historical capital expenditure since FY 1996 and forecasts capital spending until 2015. Between 2010 and 2015 the average capital expenditure is expected to be about \$8.5 million per year. About half of the annual capital expenditure will be on new vehicle purchases. Nearly forty percent will go toward construction of facilities such as the new headquarter and plaza facilities. Exhibit 6-16 provides a breakdown of average annual capital spending expected between 2010 and 2015 by expenditure categories.

Exhibit 6-16: Average Annual Capital Spending Between 2010 and 2015 by Category

Expenditure Category	2010-2015 Average (\$ Millions)
New Vehicles	3.0
Vehicle Equipment	0.3
Other Equipment	0.7
Facilities	4.5
Total	8.5

Source: GLTC Capital Improvement Plan

Exhibit 6-17 provides estimates of local output, employment, labor income, and total value added from the expected average annual capital spending between 2010 and 2015.

Exhibit 6-17: Impacts of Expected Average Annual Capital Spending

Impact Type	Output (\$)	Employment (Full Time Job Equivalents)	Labor Income (\$)	Total Value Added (\$)
Direct	5,673,271	44	2,147,626	2,333,800
Indirect	1,585,401	13	666,034	914,740
Induced	1,220,254	12	404,889	728,016
Total	8,478,926	68	3,218,549	3,976,560

6.6 Erosion of Downtown Areas

The absence of transit causes people to change their shopping patterns and makes lower density housing more attractive. Such trends often place older downtown areas at a disadvantage and lead to urban decay. This decay can become self-reinforcing leading to further decay. This is an important policy issue that is argued by some to be an important reason to maintain transit. However, the value of a vibrant downtown is a value judgment that is difficult to quantify. It is also difficult to measure the degree to which the existence of transit has helped to preserve the downtown area and how the downtown area would be impacted by the loss of transit. Nevertheless, according to the bus rider survey 54 percent of fixed route and LU riders said they would not visit the downtown or plaza areas in the absence of the GLTC.

6.7 Transit as an Option

Transit provides local residents with an alternative means of travel. Whether or not it is used, it is there as an option for emergencies, unusual occurrences, for the future, and for guests and tourists. The value of transit as an option can be measured in several ways. The value of transit as an option can be estimated by looking at the costs (or consumer surplus) of transportation services by means other than transit (e.g. use of taxicab service in the event of an automobile breakdown).

Another way to value transit as an option is to measure its perceived benefit. Individuals may value transit even if they do not actually use it, because it is available as an option. For this second method, an appropriate methodology is to query individuals in the community as to their willingness-to-pay to preserve the option of transit service even though they have no plans to use it except during some unusual occurrence. This willingness-to-pay would be best estimated by surveying the general population of the Lynchburg service area. However, since such a survey was not feasible, the bus rider survey was used to estimate the value of transit as an option. Bus riders were asked the following question, "If you do not need the bus on a regular basis, what would you be willing to pay a year to have it available in case you need it for emergencies, if your car broke down, etc.?" Respondents were given dollar ranges to choose among (e.g., \$0-\$19 and \$20-\$49).

Since the infrequent riders were considered not to be very transit dependent and more likely to view transit as an option, their responses to the survey question were used to explore the value of

transit as an option. Infrequent bus riders were defined as those who indicated they rode the bus less than once a week. The responses of these bus riders are summarized in Exhibit 6-19. Using the criteria discussed the value of transit as an option was estimated to be \$59 per person per year.

Exhibit 6-18: Willingness to Pay to Maintain Transit as an Option

Willingness to Pay Ranges to Maintain Transit as an Option	Number of Fixed Route Weekday Survey Responses	Number of Fixed Route Weekend Survey Responses	Number of Paratransit Survey Responses	Number of Liberty University Weekday Survey Responses	Number of Liberty University Weekend Survey Responses	Number of Total Survey Responses	Value Designated for Range (\$)	Value of Transit as an Option for Survey Responders (\$)
\$0 to \$19	22	5	0	10	18	55	10	523
\$20 to \$49	9	7	3	3	4	26	35	897
\$50 to \$99	8	1	0	1	1	11	75	820
\$100 to \$249	9	0	0	1	1	11	175	1,920
More than \$250	4	2	2	0	0	8	300	2,400
Total	52	15	5	15	24	111	NA	6,559

Source: GLTC bus rider survey

In order to better illustrate the importance of transit as an option, anecdotal information was drawn from the bus rider surveys. Respondents were asked in an open ended question to make general comments about the importance of the bus service to them. Exhibit 6-19 provides responses that illustrate the importance of transit as an option.

Exhibit 6-19: Respondent Comments on Transit as an Option

Weekday Fixed Route Service Comments:
The convenience I don't have to drive, can still make it to work on time.
It's very helpful in cold or rainy weather.
Weekend Fixed Route Service Comments:
Helps me when my car is messed up like last week and quick trips downtown.
I like GLTC because without GLTC I will be riding my bike.
The bus is very important. It helps especially when you don't want to wait out in the cold or the heat.
Weekday Paratransit Service Comments:
Pleasant, reliable, and a much needed and appreciated source of transportation. Thank you for all that you do.
Weekday Liberty University Comments:
I like having the option in certain weather conditions.
Normally I ride my bike to class. However, when it is raining it's nice to have the bus.
Just to get to North Campus on wet or cold days.
Weekend Liberty University Comments:
It keeps me out of the heat and cold.
Since being a student at Liberty, the bus service offers a method to get to school and where I need to go.
I am an on-campus freshman at LU. I can and do walk to wherever I need to go. The bus is very convenient, though.

Source: GLTC bus rider survey

6.8 Transit as a Means for Independent Living

Transit can allow certain individuals the ability to live independently. To go where they need and want to go even if they cannot drive or afford taxi service. It can allow an older person to continue living in their home when the only other alternative might be a move to a retirement or group home situation. It can allow mentally and physically disabled people an opportunity to live a better life. It can allow younger people the opportunity to attend activities to which their parents do not have the time or means to transport them.

As mentioned earlier, using transit can be a significantly less expensive mode of transportation relative to many other transportation options, including owning and operating a private vehicle. For example, an individual using transit for two 6.5 mile one-way trips to work, 260 days per year, would pay approximately \$780 per year (or \$1.50 per one-way trip). The same individual would pay \$8,648 for taxis per year (or \$16.63 per one-way trip). A potential savings of \$7,868 per year can be crucial for an individual with low income and significant for those with moderate income. The value of transit as a means to independent living can be quantified through the cost of alternative means of transportation or the social and economic impacts of lost trips. These costs, however, do not measure the social dislocation that the loss of mobility can cause to people. An older person may be able to replace rides by depending on family, but they still may feel a loss of freedom and dignity.

To measure how transit riders in the Lynchburg region feel concerning the extent to which transit is necessary for them to live independently, bus riders were asked the following question, “If GLTC services were not available, would it affect your ability to live independently?” The results to the survey question are provided in Exhibit 6-20. The majority of all city fixed route and paratransit bus riders felt that the loss of transit would affect their ability to live independently. A supplemental analysis also revealed that there was a positive correlation between frequency of ridership and an affirmative response to this question. In other words, those who ride transit more, depend on it more to live independently. This trend was not observed among LU riders who are often younger and more mobile than transit dependent city fixed route and paratransit riders.

Exhibit 6-20: Survey Respondents Requiring GLTC to Live Independently (%)

Personal independence would decrease without GLTC	Fixed Route Weekday	Fixed Route Weekend	Paratransit	Liberty University Weekday	Liberty University Weekend
Yes	69	70	70	26	44
No	31	30	30	74	56
Total	100	100	100	100	100

Source: GLTC bus rider survey

Survey Respondents Comments about Living Independently

In order to better illustrate the importance of transit to independent living and to link this data to real life situations, anecdotal information was drawn from the bus rider surveys. Survey respondents were asked in an open ended question to make general comments about the importance of the bus service to them. Exhibits 6-21 to 6-24 provide sample responses that

illustrate the importance of transit to independent living for weekday fixed route riders, weekend fixed route riders, paratransit riders, and LU riders respectively. These examples depict the dislocation and hardship to individuals that would occur without the transit system.

Exhibit 6-21: Weekday Fixed Route Service Comments

My movement is dependent on and limited by the bus service.
Without the bus service I would not be able to have the freedom of going where I want.
This bus service is the only way I can do what I have to do and go where I have to.
I use the bus to and from work, grocery store, volunteer at hospital, doctor visits, but there are many others who use the bus as their only means of transportation. Cabs are too expensive, Lynchburg needs you.
I would not be able to go anywhere. I need the bus. I don't have to ask nobody to take me anywhere.
I need the buses to get to places because I don't have a car and I can't afford to buy no car.
I think that being a tax payer bus services should be available especially if you don't drive. A lot of people wouldn't make it without the bus.
The bus service is very convenient for me. It makes it so I don't have to depend on others for a ride.
I depend on the bus for everything. Thanks, job well done.
The bus is the only reliable transportation I have right now to get to and from and take care of things.
It helps cut down on the wear and tear on my car. It also helps with my cost for gas.
The bus is important to me because I rely on it to get to work. Without it, it would be very difficult for me to get to work.
GLTC bus service has been a lifeline for me because my car has been in and out of the shop. Because of your service, I've been able to take my EMT class and now I'm almost finished my class.
Without the bus I could not support my family or take care of bills or medical assistance.
It is very important that I get to school on bus 7 and very important that the bus run on the weekend so I can go to work
Without the bus system, I would be greatly affected, I wouldn't be able to get to work by taxi or a ride.
I wouldn't be able to get to work because the family member that was taking me said he can't do it anymore.
Basically to work and to see my family members. Sometimes to go out to eat. Maybe give my friends a break and save some money and catch the bus.
I have to catch the bus in order to get and take my son to daycare and school and get food shopping for myself, my son and the things that I need for my house.
The buses are a good transportation for people without cars and for people with disabilities.
I'm a full time employee at Liberty U. and I live in Madison Heights and if there were no bus system I wouldn't be able to commute and in this economy I would lose my job!
We need it cause everybody don't drive or have a license.
Economical

Source: GLTC bus rider survey

Exhibit 6-22: Weekend Fixed Route Service Comments

The bus service is very important to me because it is my means of transportation, I don't have to rely on others, it's my independence.
Without the public transportation system, I would not be able to go a lot of places. Transportation would be limited.
The bus service is very important to me because I do not drive at all and I need the bus to get around. The bus is my only transportation I have if my friend couldn't take me.
I have 2 children with medical ailments (asthma) and the bus gets us to doctor appointments / hospital, daycare, school and work. Without the bus I would not make it.
The bus service is very important to me, it's really my only means of transportation, it would be very hard without it.
Because there's a lot of people out there that don't have no other way around but by bus, that's why we need this bus service, mostly for older people.
Allows me to be independent. Drivers are very courteous. Public transportation is very important to the citizens of Lynchburg.
I like GLTC because without it I would not get around. God bless each driver.
Bus is my daily transportation to work, child's school, shopping, doctor, etc. Also for my family.
It's good to have this service because there are plenty of people who don't have automobiles and can't afford the upkeep of one. Thank you GLTC for the buses!
Will you please keep the service, everybody don't drive or have a car! Buses needed to stay at the plaza, easy to shopping.
Leave the 1B on Saturday, only way I have to go work.
It is very important to me to get back and forth to work and shop.
I have back problems and without the bus system I'd be in a lot more pain and physical therapy.

Source: GLTC bus rider survey

Exhibit 6-23: Weekday Paratransit Service Comments

No bus, no doctor, no shopping, no work, no classes. I would be totally isolated without it.
Would move if bus system not available.
No bus = no functioning = no life
I'd probably be in a nursing home.
I would lose my independence without it. Thank you!
Couldn't walk far without my walker. Don't have any other way to get around except by bus. Can't live without it. Can't afford a car. Can't look for work without it.
I am completely dependent on the bus system.
Very important. I use GLTC at least 6 times each week.
I like the bus service because you don't have to wait. They are always on time to pick me up or drop me off. I am in wheel chair so it's harder in the winter time when we didn't have the bus. Thank GLTC for their help.
To go to dialysis.
I appreciate [the bus picking] me up, I couldn't travel like I do without it.
I am caregiver (daughter) and on disability. I am not available to take her to and from everyday. This service is a blessing. Thank you.
There are so many people who depend on the bus for their only means of transportation so to me the bus service is of the most importance.
With a bus to ride it gives me an inexpensive mode of reliable transportation. Presently I have been having to ride the bus more often because I have been suffering from a broken ankle and am unable to drive, but many times I just ride the bus for the convenience of not having to find a parking place in the downtown area. If Lynchburg were to lose its bus service, it would put many people in a bad position not having a way to get to work or just get anywhere. It is a good thing for all people concerned including the leaders for the city. They need to be made aware of the importance of mass transit for our city and the people who live here and ride, including Liberty University. As this school has grown the need for good reliable on and off campus transportation with so many campuses around town, makes it better for the students.

Source: GLTC bus rider survey

Exhibit 6-24: Liberty University Comments

I am a full time student. Without the bus I would not be able to get to class, grocery shop, or attend church. Bus service is a must!
Bus service makes it possible for some on campus students without cars to move off campus. Also, without the bus services students without cars wouldn't be able to travel around Lynchburg such as downtown events, etc.
It gets me to class on time and saves me gas money
Cuts my traveling time to class in half. Great convenience.
It is very convenient for getting around campus in a short amount of time, especially since I do not have a car! Thank You!
I am a student and also a full time worker so the bus plays a big factor in my life because I cannot afford a car at this time because I'm living on my own and sending myself to school.
I would not be able to get to anywhere that is not within walking distance if the bus service was not available.
When I move off campus I will rely on the bus more. I don't drive. The bus helps me avoid exercise-induced asthma attacks. The bus is good for social interaction and awareness. I like riding the bus.
The bus service here in Lynchburg is an invaluable service to me as a student. Without it, I would have a hard time getting around.
It is only method around campus.
It is important to have this bus system in order for me to get to class.

Source: GLTC bus rider survey

6.9 Gross Wages and Spending by Transit Riders

Transit facilitates a large amount of economic activity in the Lynchburg region. The gross wages and spending power of transit riders is estimated to be \$27 million. This value was determined by estimating the number of total trips by trip purpose and multiplying these values by the value per trip estimates developed for all trips as collected from the bus rider survey. The percentage breakdowns of trips by purpose were then multiplied by the total number of trips for each of the service types to calculate estimates of total trips by trip type. These estimates were then multiplied by trip values. The results are provided in Exhibit 6-25. It is important to note that this economic activity cannot be considered a benefit, because in the absence of transit, a significant portion of these economic activities would be facilitated by other modes of transportation. Nevertheless, the estimate is a valuable measure of the amount of economic activity facilitated by transit.

Exhibit 6-25: Estimates of Annual Total Trips by Type, Gross Wages, and Spending

	Fixed Route Weekday	Fixed Route Weekend	Paratransit	Liberty University Weekday	Liberty University Weekend	
Purpose of Trips (%)						
Medical	7	10	47	0	0	
School	15	14	3	86	74	
Shopping	10	16	3	3	6	
Social Service	4	5	10	1	0	
Social / Recreational	6	9	7	2	8	
Work	45	30	20	6	4	
Government Office Visit	2	4	0	0	0	
Dining	5	6	0	2	8	
Other	6	5	10	0	0	
Total Number of Trips per Year						
Medical	66,661	16,177	6,827	0	0	
School	142,331	23,367	488	1,583,788	60,941	
Shopping	91,884	26,962	488	61,706	4,941	
Social Service	34,231	8,089	1,463	20,569	0	
Social / Recreational	61,256	15,279	975	41,137	6,588	
Work	425,190	48,532	2,926	102,843	3,294	
Government Office Visit	18,017	7,190	0	0	0	
Dining	52,248	9,886	0	41,137	6,588	
Other	61,256	8,089	1,463	0	0	
Total	953,075	163,571	14,630	1,851,181	82,353	
Average One Way Trip Values Per Bus Rider (\$)						
Medical	17.27	11.22	12.71	5.00	12.00	
School	8.28	8.28	8.28	1.55	1.55	
Shopping	36.50	32.58	32.58	20.23	21.50	
Social Service	6.50	6.50	6.20	1.10	1.10	
Social / Recreational	7.50	8.82	7.50	6.63	3.75	
Work	23.37	20.83	20.83	18.85	18.85	
Government Office Visit	6.50	6.50	6.20	1.10	1.10	
Dining	7.91	6.93	6.93	6.86	6.11	
Other	13.38	7.33	5.00	13.38	18.00	
Gross Spending Power (\$)						Total
Medical	1,151,256	181,546	86,805	0	0	1,419,607
School	1,178,497	193,482	4,038	2,457,348	94,554	3,927,918
Shopping	3,354,228	878,522	15,890	1,248,145	106,235	5,603,020
Social Service	222,504	52,577	9,071	22,626	0	306,777
Social / Recreational	459,422	134,812	7,315	272,535	24,706	898,789
Work	9,934,620	1,010,870	60,945	1,938,598	62,094	13,007,127
Government Office Visit	117,107	46,735	0	0	0	163,842
Dining	413,119	68,522	0	282,254	40,278	804,173
Other	819,527	59,317	7,315	0	0	886,159
Total	17,650,281	2,626,382	191,378	6,221,505	327,867	27,017,413

Chapter 7: Economic Impacts and Benefit-Cost Analysis

Transit is an integral part of the local economy, both in the Lynchburg region and in other communities around the country. The vital role played by transit in a local region is convincingly described on the website of the Worcester Regional Transit Authority in Worcester, MA.

“Public transportation is an immediate way to conserve energy and support our environment. People who use public transportation and/or carpools remove single-passenger vehicles from the road, which lead to improved air quality, stimulation of local economies and business centers, reduce road congestion and lessen environmental damage.

- *If one in ten Americans used public transportation regularly, the U.S. reliance on foreign oil could be cut by more than 40%, which translates to the amount of oil we import from Saudi Arabia each year.*
- *The National Safety Council estimates that riding the bus is over 170 times safer than automobile travel.*
- *Emission from road vehicles are the largest contributors to smog.*
- *For every passenger mile traveled, public transportation is twice as fuel efficient as private automobiles.*
- *Public transportation use lowers household expenses and frees up more income for other needs.*
- *One-fourth of today’s 75+ age group does not drive. Public transportation is a lifeline for older adults.”²⁴*

7.1 The Economic Impacts of GLTC on the Region

The GLTC system is an economic entity that is intertwined with the regional economy in many ways. For example, the GLTC system:

- Directly employs 112 administrative, operations, and maintenance staff. GLTC provides these individuals with \$4.0 million in annual wages and fringe benefits. Spending by GLTC employees generates \$718 million in earnings benefits and supports 20 other jobs in the local economy.
- Purchases \$7.2 million in goods and services annually that support an additional 87 local jobs.

The GLTC system, at the same time, provides about 3 million passenger trips annually, a transportation benefit that this study estimates annually allows:

²⁴ Worcester Regional Transit Authority website, “Benefits of Riding the Bus”. Available at http://www.therta.com/services_benefits.html

- Transit patrons to avoid \$104 thousand in private automobile ownership and operating costs and \$216 thousand in taxi fares.
- Social service agencies to avoid \$894 thousand in additional transportation costs.
- Individuals to avoid over 1.2 million walking/hitchhiking trips.

If GLTC services were not available, it is estimated that the additional automobiles and taxis on the road would annually:

- Increase the costs of accidents by \$75 thousand.
- Increase the costs of air pollution by \$141 thousand.
- Increase the costs of congestion by \$90 thousand.

The decreased mobility resulting from the absence of GLTC services would cause individuals to cancel trips that would annually have the following effects:

- Cause a \$1.2 million dollar reduction in medical services provided.
- Reduce spending on shopping activities by \$2.4 million.
- Cause a loss of economic activity valued at \$11.0 million and the loss of the equivalent of 182 local jobs.

The GLTC system is also responsible for an influx of federal, state, and local funding. GLTC funding in fiscal year 2009 included:

- Federal funding of \$1.7 million.
- Commonwealth of Virginia funding of \$1.4 million.
- City of Lynchburg funding of \$1.1 million.
- Amherst County funding of \$53 thousand.

About 70 percent of all city fixed route and paratransit bus riders said their personal independence would decrease in the absence of GLTC. On average, bus riders indicated in the survey that they would be willing to pay up to \$59 per year to maintain transit as an option.

The total gross spending of all transit riders on is equal to \$27 million dollars annually. Gross spending is not considered a benefit, but it is an important measure of how much economic activity is facilitated by transit.

7.2 Evaluating the Benefits and Costs to the Region

A standard methodological approach to estimating the benefits and costs of a transit system is to examine the economic changes that would occur given a hypothetical situation where transit services no longer exists. The economic changes that would result from the absence of GLTC services were estimated in the previous chapter and are summarized in Exhibit 7-1. The impact categories are summarized in terms of changes in expenditures, earnings, and employment.

A benefit-cost ratio is an indicator, used in the formal discipline of benefit-cost analysis that attempts to summarize the overall value for money of a project. A benefit-cost ratio is the ratio of the benefits of a project, expressed in monetary terms, relative to its costs, also expressed in monetary terms. A project with a benefit-cost ratio of more than 1/1 is considered to provide more benefits than costs and accordingly is viewed as a favorable project within the narrow scope of benefit-cost analysis. Conversely, a project with a benefit-cost ratio of less than 1/1 is considered to provide less benefits than costs and is viewed as an unfavorable project within the narrow scope of the analysis.

Exhibit 7-1 quantifies the economic changes expected in the absence of GLTC, but it does not attempt to categorize the changes as benefits or costs. However, to evaluate the overall regional benefit of GLTC, these changes must be categorized as either a benefit or a cost. This involves, to some extent, a series of value and professional judgments.

Exhibit 7-1: Annual Changes in the Region in the Absence of Transit

Category	GLTC Funding or Revenue	New Economic Impacts Incurred	Old Economic Impacts Lost	Earnings	Jobs
Avoided costs for transit users switching to alternative modes					
Private automobile		104,548			
Ride with family		230,376			
Ride with friend		98,629			
Taxi		215,794			
Call social service agency		894,121			
Walk or hitchhike		767,026			
		2,310,494			
Avoided economic and social costs of foregone trips					
Medical			1,180,430		
School			1,197,703		
Shopping			2,424,887		
Social Service			162,119		
Social / Recreational			624,668		
Work			4,379,426		
Government Office Visit			102,165		
Dining			258,356		
Other			627,231		
			10,956,985	7,562,966	182
Avoided Externalities					
Increased accidents		75,014			
Increased air pollution		141,180			
Increased congestion		90,051			
		306,246			
Lost GLTC employee compensation					
GLTC compensation to employees			3,183,506		20
Unemployment Insurance		356,302			
		356,302	3,183,506	717,796	20
Lost GLTC purchases					
Capital expenditure			5,673,271	3,218,549	68
Operating expenditure (does not include salaries & benefits)			1,593,678	779,008	19
			7,266,949	3,997,557	87
Lost operating funds for transit					
Fares	857,875				
Other Operating Revenue	171,883				
Liberty University	1,685,664				
Federal	1,708,496				
State	1,379,485				
Advertising Concessions	50,000				
City of Lynchburg	1,128,884				
Amherst County	53,140				
Other Funding Sources	13,285				
	7,048,712				
Total	7,048,712	2,973,041	21,407,440	12,278,318	289

The Costs of Transit in the Region

Funding from the City of Lynchburg and Amherst County were considered as the only public sector costs relevant to this study. Since the focus of this study is a local benefit-cost analysis, funding from the federal and state government are not considered as relevant costs. As will be discussed later, federal and state funds are considered as negative or lost benefits, which are not the same thing as costs. The first column of Exhibit 7-2 summarizes the costs of the GLTC system from a local perspective.

The Benefits of Transit in the Region

Benefits of transit were defined as the increased costs, decreased expenditures, or negative social consequences that would be imposed on individuals, businesses, and the general Lynchburg community if transit were eliminated. Benefits were measured on an annual basis for the following categories:

- Avoided costs for transit users switching to alternative modes
- Avoided economic and social costs of foregone trips
- Avoided externalities
- Lost GLTC employment
- Lost GLTC purchases
- Lost non-local operating funds for transit

The benefit categories are discussed in the following paragraphs.

Avoided Costs for Transit Users Switching to Alternative Modes

Without GLTC services, individuals will have drive, ride with family or friends, take taxis, use a social service transportation service, and walk more. Each of these options has a cost. These expenditures will place a real hardship on many of individuals, especially low income individuals, who may have to forego basic necessities in order to pay for higher transportation costs. In many situations, additional burdens to drive family members and friends will be placed on Lynchburg residents. For the physically and mentally disabled, the absence of properly trained drivers with equipment designed for specific needs will present a significant problem. These hidden costs will most likely not result in a significant change to the total level of economic activity in the region, but will clearly diminish the well-being of many individuals. As shown in Exhibit 7-2, the presence of GLTC provides a \$2.3 million benefit to the Lynchburg region.

Exhibit 7-2: Annual Benefits and Costs of GLTC for the Lynchburg region

	Costs	Direct Benefits	Earnings	Total Benefits
Avoided costs for transit users switching to alternative modes				
Private automobile		104,548		
Ride with family		230,376		
Ride with friend		98,629		
Taxi		215,794		
Call social service agency		894,121		
Walk or hitchhike		767,026		
		2,310,494		2,310,494
Avoided economic and social costs of foregone trips				
Medical		1,180,430		
School		1,197,703		
Shopping		2,424,887		
Social Service		162,119		
Social / Recreational		624,668		
Work		4,379,426		
Government Office Visit		102,165		
Dining		258,356		
Other		627,231		
		10,956,985	7,562,966	7,562,966
Avoided Externalities				
Increased accidents		75,014		
Increased air pollution		141,180		
Increased congestion		90,051		
		306,246		306,246
Lost GLTC employee compensation				
GLTC compensation		3,183,506		
Unemployment Insurance		-356,302		
		2,827,204	717,796	717,796
Lost GLTC purchases				
Capital expenditure		5,673,271	3,218,549	
Operating expenditure (does not include salaries & benefits)		1,593,678	779,008	
		7,266,949	3,997,557	3,997,557
Lost operating funds for transit				
Fares		-857,875		
Other Operating Revenue		-171,883		
Liberty University		-1,685,664		
Federal		-1,708,496		
State		-1,379,485		
Advertising Concessions		-50,000		
City of Lynchburg	1,128,884			
Amherst County	53,140			
Other Funding Sources		-13,285		
	1,182,024	-5,866,688		-5,866,688
Total	1,182,024	17,801,190	12,278,318	9,028,369
Benefit Cost-Ratio (Total Benefits / Costs)				7.6

Note that if transit did not exist, transportation costs associated with other modes of transportation could be thought of as the saving individuals would realize if they were provided with transit.

Avoided Economic and Social Costs of Foregone Trips

Without transit, many individuals will face higher alternative transportation costs and will choose to cancel trips. When a significant number of people cancel shopping, work, school, medical, and other trips, jobs in the local economy will eventually decrease. Undoubtedly, economic activity in the region will decrease with reduced mobility. As shown in Exhibit 7-2, the avoidance of these lost wages and expenditures provide a \$7.6 million benefit to the Lynchburg region. These benefits can also be considered from the opposite viewpoint as the increases in economic development made possible by the additional mobility provided by transit. Note that the benefit of these changes in the wages and expenditures of Lynchburg residents are evaluated in terms of the earnings impact on the region, as opposed to the direct wage and expenditure values. The earnings impact is calculated by the IMPLAN economic input-output model with Lynchburg specific multipliers.

Avoided Externalities

In the absence of GLTC, increased reliance on car travel will increase accidents, air pollution, and congestion. These effects represent negative impacts on the region, but do not directly affect earnings and employment levels. Accordingly, the exact value of the externalities avoided is considered to be the value of this benefit. As a result of GLTC services, the Lynchburg region observes the following:

- A \$75 thousand benefit due to avoided accidents
- A \$141 thousand benefit due to avoided air pollution
- A \$90 thousand benefit due to avoided congestion

Lost GLTC Employee Compensation

The wages provided to GLTC staff create a \$718 thousand benefit. Note that the benefit of wages and avoided unemployment compensation are evaluated in terms of the earnings impact on the region. It should also be noted that in the long run, benefits in this category would partially dissipate as some employees would find new local employment opportunities in the absence of GLTC.

Lost GLTC Purchases

The absence of the GLTC system would result in the loss of substantial transit system capital and operating expenditures. Many of the goods and services bought with these expenditures are purchased from local businesses and suppliers. GLTC capital and operating expenditures create a \$4.0 million earnings benefit to the Lynchburg region.

Lost Operating Funds for Transit

Lost operating funds for transit service includes operating revenue and funding from various sources. Operating revenue include fares, advertisements placed on buses and bus stops, and

contracts with Liberty University. Funding is usually received from federal, state, and local government sources. Revenue and non-local (e.g. federal and state) funding were considered as negative benefits. Funding from the City of Lynchburg and Amherst County were considered as costs.

Benefit-Cost Ratio

The total benefit column in Exhibit 7-2 summarizes the benefits of the GLTC system from a local perspective. The sum of the benefits equals \$9.0 million. The sum of the costs to the City of Lynchburg and Amherst County equals \$1.2 million. The ratio of benefits to costs is 7.6 to 1. This can be interpreted to suggest that every \$1 spent by the City of Lynchburg and Amherst County on the GLTC system returns \$7.60 dollars in benefits to the local community.

Reassuringly, the GLTC benefit-cost ratio is within the range of benefit-cost ratios found in studies of transit systems for cities such as Memphis (19.96 to 1), Philadelphia (8.33 to 1), and Roanoke (3.9 to 1). The findings are also in line with the benefit-cost ratio of transit systems in urban areas across Tennessee (3.4 to 1) and eight rural transit systems examined as part of a Transit Cooperative Research Program report (range 4.22/1 to 1.67/1). All these comparison results were detailed in Chapter 3.

Benefits and Costs at the National Level

The impacts at the national level should be a concern to all citizens. The federal government should make decisions that are both efficient and equitable. Understanding the benefits and costs of transit helps politicians, policy analysts, and citizens to understand more about the efficiency of transit. Equity, however, is a more difficult question that must be left to the political process. Moreover, the efficiency of transit at the national level should not be the basis for decisions at the local level. This is because the exact purpose of the federal subsidy is to influence decisions at the local level, by making transit more financially attractive. The costs and benefits of GLTC at the national level can be calculated in much the same manner as the local level benefits and costs were calculated in this study. However, it would require the use of national level economic multipliers, consideration of all GLTC purchases and compensation (not just those spent in the GLTC service area), different treatment of welfare and unemployment benefits, inclusion of federal and state subsidies as a cost of the system, and a variety of other changes.



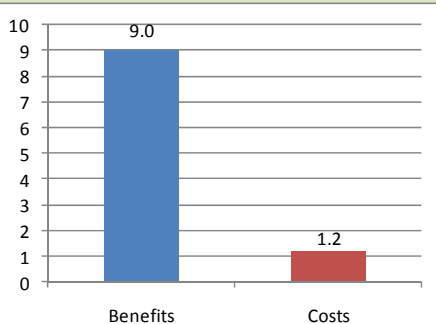
Go Green & Ride Blue With GLTC!

GLTC PROVIDES LYNCHBURG REGION WITH \$9 MILLION IN LOCAL BENEFITS ANNUALLY

GLTC creates \$7.60 in benefits for every \$1 in funding from Lynchburg and Amherst County

Overview - The Greater Lynchburg Transit Company (GLTC) provides transit service to people in Lynchburg and Madison Heights, Virginia. A study of GLTC's average annual economic impacts was completed in February 2010; this fact sheet details the findings of the study. GLTC's benefits to local residents are significantly larger than the costs to fund the bus service incurred by Lynchburg and Amherst County, where Madison Heights is located. Transit service provides the Lynchburg region with \$9 million in benefits annually.

Annual Local Transit Benefits and Costs (\$ Millions)



The City of Lynchburg provides GLTC with about \$1.2 million in funding annually. Amherst County contributes about \$53 thousand in funding annually.

The ratio of benefits to cost can be compared using a benefit-cost analysis.

GLTC provides the region a total of \$9.0 million in benefits and costs local governments about \$1.2 million annually. Therefore, the ratio of local benefits to funding costs is 7.6 to 1, which means that almost every dollar spent by local governments on the GLTC system returns \$7.60 dollars in benefits to the community.

GLTC'S Annual Impacts to Region

- Provides 3 million passenger trips to destinations across Lynchburg and Madison Heights
- Employs 112 administrators, bus drivers, and mechanics
- Indirectly supports an additional 289 local jobs
- Saves \$2.3 million in transport costs to local residents
- Saves \$306,000 in accidents, air pollution, & congestion
- Enables \$27 million in economic activity in a wide variety of economic sectors
- 70 percent of bus riders said their personal independence would decrease in the absence of transit

GLTC background - GLTC is a publicly-owned, non-profit company that provides public transportation service in Lynchburg and the adjacent community of Madison Heights. GLTC provides fixed-route transit service, open to the general public, and paratransit service for qualifying persons with disabilities. GLTC also operates, under the name LU Transit, fixed-routes that serve Liberty University. The transit service area has a population of about 80,000 people.

Transit Passenger Statistics in FY09

Service	Passengers (thousands)	Average trip length (miles)
City Fixed Route	1,116	6.5
Paratransit	14	6.2
LU Transit	1,933	1.1
Total	3,064	NA

GLTC's Impact on Jobs - GLTC directly employs 112 employees and indirectly supports an additional 289 full time equivalent jobs in the local economy.



GLTC's Mission - To provide safe, dependable, affordable, accessible and high quality public transportation to the Central Virginia community.



Greater Lynchburg Transit Company Economic Impact Fact Sheet

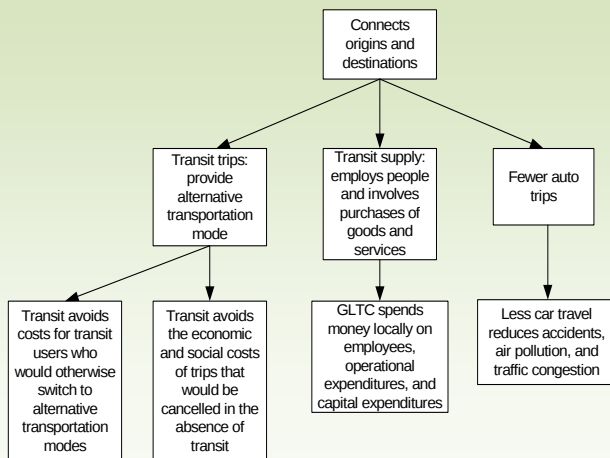
More Than Just a Social Program - GLTC

facilitates more than \$27 million worth of economic activity annually across a wide range of economic sectors. Local residents recognize the convenience and value transit service adds to their lives. In a GLTC onboard rider survey, the average bus rider that is not transit dependent indicated he or she would be willing to pay \$59 annually to maintain transit as a local transportation option.

Other local economic impacts created by GLTC can be measured against a theoretical scenario in which transit in Lynchburg no longer exists. Such impacts include:

- Avoided costs of switching to other transportation modes
- Avoided economic costs of trips that would be cancelled
- Avoided accidents, air pollution, and congestion
- Lost GLTC employee compensation
- Lost GLTC operating and capital purchases

Benefits of Transit System



Transit and Individual Independence -

Transit can help certain people live more independently if they cannot drive or afford taxis. It can help an older person to continue living in his or her home instead of a retirement home. It can allow mentally and physically disabled people an opportunity to live a better life. It can allow younger people the opportunity to attend activities to which their parents do not have the time or means to transport them.

GLTC Facilitates \$27 Million in Local Economic Activity

Transit facilitates transactions in a wide range of economic sectors. The following examples detail spending in some sectors:

- Medical: \$1.4 million
- Education: \$3.9 million
- Shopping: \$5.6 million
- Dining: \$0.8 million

Transit Rider Comments - Some benefits are better described qualitatively than quantitatively. Anonymous anecdotal information collected from an on-board bus rider survey is provided below to illustrate the value of transit to local residents.

"I am a full time employee at Liberty University and I live in Madison Heights ... if there was no bus system, I wouldn't be able to commute and in this economy I would lose my job!"

"I use the bus to go to work, grocery stores, volunteer at hospitals, doctor visits ... there are many others who use the bus as their only means of transportation. Cabs are too expensive, Lynchburg needs [GLTC]."

"The bus service is very convenient for me. It makes it so I don't have to depend on others for a ride."

"With a bus to ride it gives me an inexpensive mode of reliable transportation. Presently I have been having to ride the bus more often because I have been suffering from a broken ankle and am unable to drive. If Lynchburg were to lose its bus service, it would put many people in a bad position not having a way to get to work. [Transit] is a good thing for all people concerned including the leaders of the city. They need to be made aware of the importance of mass transit for our city and the people who live here."



Monument Terrace



James River

For More Information

Including a technical report, contact:

GLTC, PO Box 797
Lynchburg, VA 24505-0797
Email:
Gloria.Berkley@lynchburgva.gov
Telephone: 434-455-5080

Prepared by Jack Faucett Associates, Inc.
Economics & Public Policy,
Founded 1963. www.jfaucett.com

Key Data Sources

- Victoria Transport Policy Institute, 2009, "Evaluating Public Transit Benefits and Costs - Best Practices Guidebook."
- Transit Cooperative Research Program, Report 78, 2002, "Estimating the Benefits and Costs of Public Transit Projects: A Guidebook for Practitioners."
- Transit Cooperative Research Program, Report 34, 1998, "Assessment of the Economic Impacts of Rural Public Transportation."
- U.S. Department of Transportation, T93-33, 1993, "Measurement of Transit Benefits."
- U.S. Census Bureau, Population Estimates Program, July 2008
- Federal Highway Administration, 2001, National Household Transportation Survey

LYNCHBURG CITY COUNCIL

Agenda Item Summary

MEETING DATE: **September 27, 2011**

AGENDA ITEM NO.: 12

CONSENT:

REGULAR: X

WORK SESSION:

CLOSED SESSION:

(Confidential)

ACTION: X

INFORMATION:

ITEM TITLE: **Appropriate Funds from the Arts and Cultural District Designated Fund Balance Reserve**

RECOMMENDATION:

Adopt a resolution to amend the FY 2012 General Fund budget and appropriate \$30,000 with resources from the Arts and Cultural District Designated Fund Balance Reserve to allow the Office of Economic Development to provide incentives to attract and grow arts and cultural organizations.

SUMMARY: On April 27, 2010, City Council adopted an ordinance creating an Arts and Cultural District. With the adoption of the FY 2012 Operating Budget a reserve of \$30,000 was established. The Office of Economic Development (OED), with assistance from the Economic Development Authority (EDA), is responsible for dispersing funds to support projects that will attract and grow arts and cultural organizations.

Currently, the OED is implementing a program where organizations can apply for Arts and Cultural District mini-grants. In order to receive an award, projects will need to meet certain criteria. As organizations begin to submit projects for consideration, these funds must be accessible.

While establishing the Designated Fund Balance Reserve set aside the funds, Council must appropriate the funds in order for them to be available for use.

PRIOR ACTION(S):

Finance Committee September 27, 2011

City Council May 24, 2011 – Arts and Cultural District Designated Fund Balance Reserve adoption

City Council April 27, 2010 – Arts and Cultural District Ordinance adoption

FISCAL IMPACT:

None

CONTACT(S):

Marjette Upshur, Director of Economic Development, 455-4492

ATTACHMENT(S):

Resolution

REVIEWED BY: lkp

RESOLUTION:

BE IT RESOLVED that the FY 2012 General Fund budget is amended and \$30,000 is appropriated with resources from the Arts and Cultural District Designated Fund Balance Reserve to allow the Office of Economic Development to provide incentives to attract and grow arts and cultural organizations.

Introduced:

Adopted:

Certified:

Clerk of Council

139L

LYNCHBURG CITY COUNCIL

Agenda Item Summary

MEETING DATE: **September 27, 2011**

AGENDA ITEM NO.: 13

CONSENT:

REGULAR: **X**

WORK SESSION:

CLOSED SESSION:

(Confidential)

ACTION: **X**

INFORMATION:

ITEM TITLE: **Donation from St. John's Episcopal Church to Build a Story Time Room at the Public Library**

RECOMMENDATION:

Adopt a resolution to amend the FY 2012 City Capital Projects Fund budget and appropriate \$150,000 with resources from a donation from St. John's Episcopal Church to build a dedicated story time room at the Lynchburg Public Library.

SUMMARY:

In honor of its 100th anniversary the members of St. John's Episcopal Church decided to make a major gift to the community. After reviewing over fifty possible projects, the Church decided on a project to benefit the City's youngest residents, the children, citing the ability to read as the cornerstone of good citizenship and success in life. Library staff provides over 200 age-specific story times to hundreds of children from across the City each year; a dedicated room will enhance this experience.

The \$150,000 donation will provide for the design and construction of a dedicated story time room at the Lynchburg Public Library. A goal of \$50,000 has been set to decorate and furnish the approximately 650 square foot room. As part of the FY 2011 Carry Forward request presented to City Council on September 13, 2011, \$10,000 is earmarked as the City's contribution towards this private-public partnership. The Friends of the Lynchburg Public Library, which has long served as an advocate for the Library, has committed to raise the remaining \$40,000. LU Plaza Holdings, LLC, owner of the library parking lot, is providing additional community support by committing to donate the land necessary to build and landscape this space.

PRIOR ACTION(S):

September 27, 2011 Finance Committee

September 13, 2011 City Council Meeting, FY 2011 Carry Forward

FISCAL IMPACT:

\$10,000 appropriated at FY 2011 Carry Forward

CONTACT(S):

Lynn Dodge, Director of Libraries and Museums, 455-6330

ATTACHMENT(S):

Resolution

REVIEWED BY: bms

RESOLUTION:

BE IT RESOLVED that the FY 2012 City Capital Projects Fund budget is amended and \$150,000 is appropriated with resources from a donation from St. John's Episcopal Church to build a dedicated story time room at the Lynchburg Public Library.

Introduced:

Adopted:

Certified:

Clerk of Council

140L

LYNCHBURG CITY COUNCIL

Agenda Item Summary

MEETING DATE: **September 27, 2011**

AGENDA ITEM NO.: 14

CONSENT:

REGULAR: **X**

WORK SESSION:

CLOSED SESSION:

(Confidential)

ACTION: **X**

INFORMATION:

ITEM TITLE: **Resolution in Opposition to the Closure of the Courthouse Branch Post Office**

RECOMMENDATION: Adopt the attached resolution expressing opposition to the potential closure of the Courthouse Branch Post Office located at Clay and 12th Streets.

SUMMARY: The information in the resolution provides background. Closure of the “downtown” post office would have numerous negative consequences. The Postal Service is currently receiving comment as it studies the potential closure of facilities.

PRIOR ACTION(S): None

FISCAL IMPACT: Undetermined

CONTACT(S): Kimball Payne, 455, 3990; Donna Witt, 455-3968

ATTACHMENT(S): Proposed resolution

REVIEWED BY: lkp

RESOLUTION:

WHEREAS The United States Postal Service has initiated a study regarding the possible closure of 3700 Post Office retail facilities as part of a cost savings initiative, and

WHEREAS the Courthouse Branch Post Office facility, located in downtown Lynchburg, Virginia at the corner of Clay and 12th Streets, is one of the locations under review, and

WHEREAS the Courthouse Branch Post Office serves the City's downtown central business district, including City Hall, the Department of Social Services, other local, state and federal offices, numerous businesses and residents of downtown, and

WHEREAS the Courthouse Branch Post Office was built as part of a Federal Courthouse project in 2005 and has been an important contributor to downtown revitalization, and

WHEREAS the closure of the Courthouse Branch Post Office would have numerous negative consequences including delays in the receipt and processing of tax and utility bill payments to the City, reduced timeliness in responding to the needs of Social Services clients, and additional costs for and delays in mail service to downtown businesses and residents, and particularly the many lower income residents served by the Courthouse Branch who cannot afford the cost to drive or take a bus to another postal facility,

NOW, THEREFORE, BE IT RESOLVED THAT the Lynchburg City Council does hereby express its strong opposition to the closure of the Courthouse Branch Post Office as such closure would be detrimental to downtown revitalization, inconvenient for businesses and residents, and costly for citizens and the City government.

AND, FURTHERMORE, BE IT RESOLVED THAT the City Manager is hereby directed to forward a copy of this resolution to the Postmaster General, the City's congressional delegation and any other individuals or agencies as might be appropriate to respond to this issue.

Adopted:

Certified:

Clerk of Council