

# PUBLIC TRANSIT FEASIBILITY STUDY FINAL REPORT

*Submitted to*  
**BURLINGTON-GRAHAM URBAN AREA**



*Submitted by*  
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### **Purpose of the Public Transit Feasibility Study**

The purpose of the Public Transit Feasibility Study is to evaluate the feasibility of operating a regularly scheduled public transportation program within the Burlington-Graham urban area, including coordination with existing services provided by Alamance County Transit Authority (ACTA) and the Piedmont Authority for Regional Transportation (PART).

The study covers the Burlington-Graham urbanized area and its member jurisdictions of Burlington, Graham, Gibsonville, Elon, Mebane, the Village of Alamance, and Alamance County.

The study included the design of transit routes and schedules, a review of operational data from similar-sized systems in North Carolina, stakeholder interviews, questionnaire design and the analysis of results from surveys of agencies, companies and individuals regarding public transportation, and regular presentations to the Burlington-Graham Technical Coordinating Committee (TCC) and the Transportation Advisory Committee (TAC).

### **The Need for Expanding Transit Service Options**

In April 2003, the Alamance Board of County Commissioners adopted the *Destination 2020 Strategic Plan* as a guide for the future growth and development of the county. The Plan included the following implementation action related to public transportation:

*Consider working closely with the MPO, the Piedmont Authority for Regional Transportation, and the newly created Alamance County Transit Authority to establish a combination of flexible and fixed-route bus service for the area.*

Through a series of interviews with 15 community leaders, the following weaknesses of existing public transit operations were cited:

- No regularly scheduled, fixed-route services
- High cost to customer (\$5.00 for a one-way trip) of ACTA's door-to-door transportation
- Lack of citizen awareness of ACTA's existing services
- ACTA's existing demand responsive services require calling 24 hours in advance of the trip
- Long waiting times for return trips to home when using ACTA services

During stakeholder interviews, the following opportunities for expanding public transit services in the urban area were mentioned:

- Increasing elderly population with growing desire to access community services
- Promoting economic development by improving access to employment, re-training, and shopping
- Leveraging federal and state transit grant funds to improve the quality of life for residents in the urban area
- Increasing gasoline prices which make the cost of operating a car more expensive, particularly for citizens on fixed incomes
- Increasing Hispanic population needing transportation to community services
- Parking constraints at Elon University and Alamance Community College (ACC)



*Patrons at transit hub in Springfield, OR*

In order to learn more about the need and possible design of public transit services for the Burlington-Graham urban area, representatives of 19 major employers and agencies completed surveys. These respondents ranked “beginning public transportation” as the most important transportation priority from a list of multi-modal options. The transportation priority rated second-highest was “improving transportation services for the elderly and persons with disabilities”.

Agency or employer representatives completing the survey identified a willingness to provide the following three incentives to encourage persons to use public transit:

- Provide space to prominently display transit information and schedules.
- Offer persons flexible scheduling so that work schedules coincide with public transit schedules
- Provide preferential parking for persons who carpool or vanpool

Over 75 percent of the social service agency and employer representatives replying to the questionnaire expressed support for a slight tax increase if the money was used for public transit operations.

A second survey used during the study was distributed to residents of the Burlington-Graham urban area to obtain citizen input in the design of public transit services for Alamance County. Nearly 1200 surveys were received from residents of the urban area. Highlights of the survey include:

- Approximately 25 percent of the respondents indicated that there was a person in their household over the age of 16 who did not have a car or a driver’s license.
- The highest rated purpose for a public transit system was to help people get to and from work.
- Over 40 percent of survey respondents would primarily use the bus to commute to and from work while 20 percent indicated that they would never use public transit.

- Over 70 percent of persons indicated a willingness to use bus service, with 50 percent being very willing to try the bus. A smaller number of Burlington-Graham residents, 46 percent, are willing to try carpools or vanpools.
- Respondents to the Burlington-Graham Urban Area survey indicated a willingness to pay more for bus service than what is being charged in North Carolina cities.
- Support for an increase in taxes to begin fixed-route bus operations in the Burlington-Graham urban area was evenly divided among survey respondents:
  - Very willing 26 percent
  - Somewhat willing 24 percent
  - Not sure 23 percent
  - Not willing 27 percent
- About two-thirds of the 1200 persons completing survey forms were females.
- Nearly half of the respondents were over the age of 55 including 28 percent over 65.



*Charlotte Area Transit System operates community-based transit service called EZRider*

### Preliminary Service Plan

The design of a preliminary fixed-route transit system covering Burlington, Graham, Mebane, Gibsonville, and Elon included the following steps:

- Considered areas where the density of residences of persons 65 years and older are greatest based on U.S. Census data.
- Considered areas which have concentrations of homes of “transit dependent” persons.
- Identified housing densities from three to four dwelling units per residential acre, which can support the operation of a minimal level of fixed-route bus service (service provided every hour).
- Reviewed preliminary system concepts at TCC and TAC meetings; considered feedback from committee members.
- Reviewed system options in light of stakeholder survey responses.
- Considered possible phasing of transit services.

The initial design of transit system for the Burlington-Graham urban area includes five routes operating every hour and one route operating at a 30-minute frequency. Eight vehicles would be needed for system operation. By interconnecting routes at a major transit system hub in downtown Burlington, passengers could travel from as far west as Gibsonville to as far east as Mebane without having to transfer between buses.

Transit service would operate from 5:30AM to 6:30PM, Monday to Friday. These operating hours are typical for transit systems in small to medium-sized cities in North Carolina. Weekday service only is generally the preferred manner for starting-up transit service in a new location and is supported by survey responses from residents in the Burlington-Graham urban area.

The preliminary six routes for the urban area include:

- A route connecting downtown Gibsonville with downtown Burlington that also serves new shopping destinations located at Exit 140 on I-40 and commercial developments along Huffman Mill Road such as Wal-Mart and Colonial Mall. This route serves the Twin Lakes retirement community off of

Church Street in Elon and key passenger generators such as the Employment Security Commission and the Senior Center. The route also operates to Alamance Regional Medical Center, a location often cited by survey respondents and stakeholders.

- A route, which could be interconnected with the aforementioned Burlington to Gibsonville route, operating between downtown Burlington and downtown Mebane, with a connection to Alamance County government facilities located in downtown Graham. Direct service is provided between the Burlington campus of ACC and the community college’s main campus. The route also serves Burlington Outlet Center located near Chapel Hill Road in Burlington.
- A route operating primarily in Burlington which is designed to serve commercial developments along West Church Street such as Colonial Mall and Koury Center. Transit service is operated to Burlington Williams High School and the Brookwood retirement community. The end-of-the-line for the route is Twin Lakes, providing a second transit route for this major retirement center.
- A route serving the eastern portion of Burlington which could be interconnected with the previously mentioned route operating along West Church Street to provide direct service for passengers traveling from one side of Burlington to the other. The route serves residential areas along Rauhut Street and Alamance County offices on Graham-Hopedale Road, including the Department of Social Services. Transit service is provided to Burlington Cummings High School and to commercial areas located along East Church Street.
- A route connecting downtown Burlington with Elon University. Transit service is operated to Glen Raven Mills, Carolina Biological and Labcorp, three major Burlington employers. The route loops through the Elon campus by traveling along

Lebanon and Haggard Avenues. The Vocational Trades Center on West Webb Street in Burlington also is served by this route.

- During discussions with Elon University officials, frequent, direct bus service between the campus and the new businesses at Exit 140 surfaced as a transit need from the University's perspective. The route loops around the Elon campus and travels along Williamson Avenue and Saint Marks Church Road to access Target and other retailers at Exit 140. Service would operate every 30 minutes.

**Figure E-1** is a system map showing the six routes proposed for start-up of a transit system in the urban area.

### Transit Capital Program

The start-up of a new public transportation system requires an investment of public funds for capital assets and ongoing financial assistance for annual transit operations. Although the extent of the capital program would depend on the size of the transit system implemented in the Burlington-Graham urban area, the following capital assets will be needed:

- Vehicles. Based on transit operations in other North Carolina cities similar in size to the Burlington-Graham urban area, a 30-foot, low-floor vehicle could be appropriate. This diesel-powered bus has a seating capacity of 28 passengers, costs about \$280,000, and can be delivered in 12 to 18 months.



Tar River Transit bus in Rocky Mount, NC

- Transportation Hub. The preliminary transit service plan includes construction of a transportation hub located in downtown Burlington. Creation of a pulse system from this hub necessitates provision of passenger amenities for those transit users transferring between routes. A small transportation center also benefits passengers traveling to downtown Burlington to work or shop.
- Bus shelters. Shelters at major passenger generators provide a place for customers to wait for their bus out of the weather.
- Bus stop signs. The installation of bus stop signs is an important start-up activity from both operations and marketing perspectives. The designation of passenger boarding and alighting locations promotes customer safety and facilitates efficient route operating speeds.



Bus stop signs used by Charlotte Area Transit System

- Fareboxes. Transit systems like the one which could be started in the Burlington-Graham urban area use a secure fare collection system that includes low-maintenance, non-registering fareboxes.
- Communications System. A communications system is a critical element to ensuring efficient and effective transit operations. This is particularly true for a pulse service design in which all routes meet regularly throughout the day in order to facilitate passenger transfers.

## **Projected Transit Grant Revenues**

Funding is available through Federal and State grant programs for start-up and operation of local transit systems.

### **Federal Section 5303 Grant Program Metropolitan Planning (\$25,000)**

The Section 5303 Metropolitan Planning Program, administered by the Federal Transit Administration (FTA), provides financial assistance to local governments for conducting transportation planning activities in urban areas with populations greater than 50,000. Member jurisdictions of the Burlington-Graham urban area could include transit-oriented tasks in the Planning Work Program (PWP) for funding under the Section 5303 program following approval by the TCC and the TAC. Section 5303 funds must be matched by state and local funds.

### **Federal Section 5307 Grant Program Urbanized Area Formula Program (\$934,150)**

The FTA also administers the Section 5307 Urbanized Area Formula Program. For urbanized areas with populations greater than 200,000, such as Burlington-Graham, federal funds are distributed directly to the designated recipients. The Section 5307 program provides funding for planning and capital items at 80 percent of their cost. The program also provides 50 percent of the net annual deficit for transit operations in an urbanized area. The FY 2006 allocation for the Burlington-Graham urban area is \$934,150. This federal apportionment must be matched by state and local funds.

### **State Start-up Capital Grant Program**

NCDOT will provide funds to enable an urbanized area to purchase the vehicles, shelters, signs, fareboxes, and other equipment to get transit service underway. The funding is available when other urbanized areas in North Carolina do not use their full Federal apportionment and will cover 90 percent of

eligible capital costs for system start-up. These funds must be matched with local revenues.

### **State Maintenance Assistance Grant Program (\$50,000)**

NCDOT administers the State Maintenance Assistance Program (SMAP) to assist urban and rural areas with operating costs for fixed-route and demand-responsive public transportation that are not covered by Section 5307 program funds. SMAP funds cannot be used to match federal funds or serve as local matching funds for other state programs.

The Burlington-Graham urban area could receive SMAP funds from NCDOT once fixed-route transit services are implemented. In the first year of transit system operation, Burlington-Graham would be eligible for \$50,000 in SMAP funds. In the second year, the share would increase to about \$130,000, and this annual allocation could grow to about \$150,000 in future years as SMAP's performance and local commitment provisions become applicable for the Burlington-Graham urban area transit service. The state's SMAP funding cannot exceed the amount of local assistance being contributed to annual transit operations.

### **System Operating Expense/Revenue Forecasts and First Year Budget**

The estimation of annual operating expenses for the preliminary transit system for the Burlington-Graham urban area was based on information from North Carolina peer cities. Annual operating expenses for fixed-route service were estimated at an hourly cost of \$55. This amount is comparable to the rates being charged to PART and the City of Concord by private companies, which operate their transit services. Projected operating expenses also were increased to include the provision of transit services to the disabled as required by the Americans with Disabilities Act.

Operating revenues were estimated using a fare recovery ratio of 10 to 12 percent. This recovery factor is consistent with recent experience of the North Carolina peer transit systems and reflects expected transit patronage during system start-up.

As mentioned above, this NCDOT program provides a maximum of \$50,000 during the initial year of operation of a new transit system. In future years, the Burlington-Graham urban area could receive between \$125,000 and \$150,000 annually.

A source of local funding for public transit systems which has been approved by the North Carolina General Assembly is found in Section 20-97 of the State's General Statutes. Subsection (b) permits the levy of a tax of not more than \$5.00 per year on each vehicle within the jurisdiction to be used for any lawful purpose. Subsection (c) allows cities or towns to levy a municipal vehicle tax of not more than \$5.00 for financing, constructing, operating and maintaining local public transportation systems. This municipal vehicle tax for public transportation can be in addition to the tax authorized under subsection (b).

Based on estimated vehicle ownership in Alamance County jurisdictions, a \$5.00 municipal vehicle tax yields the following annual amounts:

Burlington	\$185,000
Graham	\$ 60,000
Mebane	\$ 40,000
Elon	\$ 30,000
Gibsonville	<u>\$ 20,000</u>
TOTAL	\$335,000

The estimated first year budget for operating the preliminary transit system in the Burlington-Graham urban area is:

### **Revenues**

Passenger	\$150,000
SMAP (State)	\$ 50,000
Federal Government	\$675,000
Local Government	<u>\$675,000</u>
TOTAL	\$1,500,000

<b>Expenses</b>	\$1,500,000
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### **Next Steps**

Establishing a new public transit system for the Burlington-Graham urban area requires completing a number of key steps in transit governance/administration, transit system operations and transit system funding.

### **Determine Transit Organization**

The organizational structure establishes an entity that has the legal right or authority to provide transit service. It includes political jurisdictions, public transportation authorities, and other organizations that have been granted (by some entity) the authority to operate transit service within a specified geographical area.

The City Councils of Salisbury, Hickory, Gastonia, Wilson, Concord and Greenville make policy decisions for public transit as a service provided by local government. This organizational arrangement may be appropriate where a majority of the service is being operated in a single jurisdiction.

ACTA is an existing authority which includes representatives of local governments in the Burlington-Graham urban area and has the sole mission of providing transit services to Alamance County residents. ACTA operates human service transportation and general public transit services throughout the county.

PART is a regional transportation authority which includes Alamance County. This organization is currently operating regional transit services between Greensboro, Winston-Salem and High Point and is a designated recipient of Federal and State transit funding.



*PART bus used for Triad Regional Service*

### **Determine Service Delivery Approach**

Burlington-Graham's decision on how to organize transit operations within the urban area will affect how transit service could be delivered. If the City of Burlington assumes responsibility for the service, it could be operated by City personnel or by employees from a private contractor hired by the City. If ACTA assumes oversight for the new fixed-route system in the Burlington-Graham urban area, this organization's employees could operate the service. PART's regional transit services are operated by a private contractor so new services in the Burlington-Graham urban area could be added to this company's existing agreement with PART.

### **Identify Transit System Funding**

Discussions should continue with NCDOT's Public Transportation Division (PTD) on the availability of start-up capital funds and operating assistance from Federal and State sources. Any certifications or assurances that are required for the use of Federal or State

funds should be clarified for elected officials. PTD staff can identify the requirements for the SMAP program, verify expected funding levels, and discuss procedures for obtaining State operating assistance.

Obtaining Federal and State transit grants will require local matching funds of 10 to 20 percent for planning and capital items and 50 percent for transit operations. Start-up of transit operations in the Burlington-Graham urban area depends on the identification of a transit revenue source that has local support.



*RIDER bus used in Concord-Kannapolis, NC*

**Figure E-2** outlines the sequence of steps required to get public transit operations underway in the Burlington-Graham urban area. Concord and Kannapolis followed a similar process in 2003 and 2004 in order to begin RIDER, the bus system serving the two cities, in April 2004.



Figure E-1: Preliminary System Map

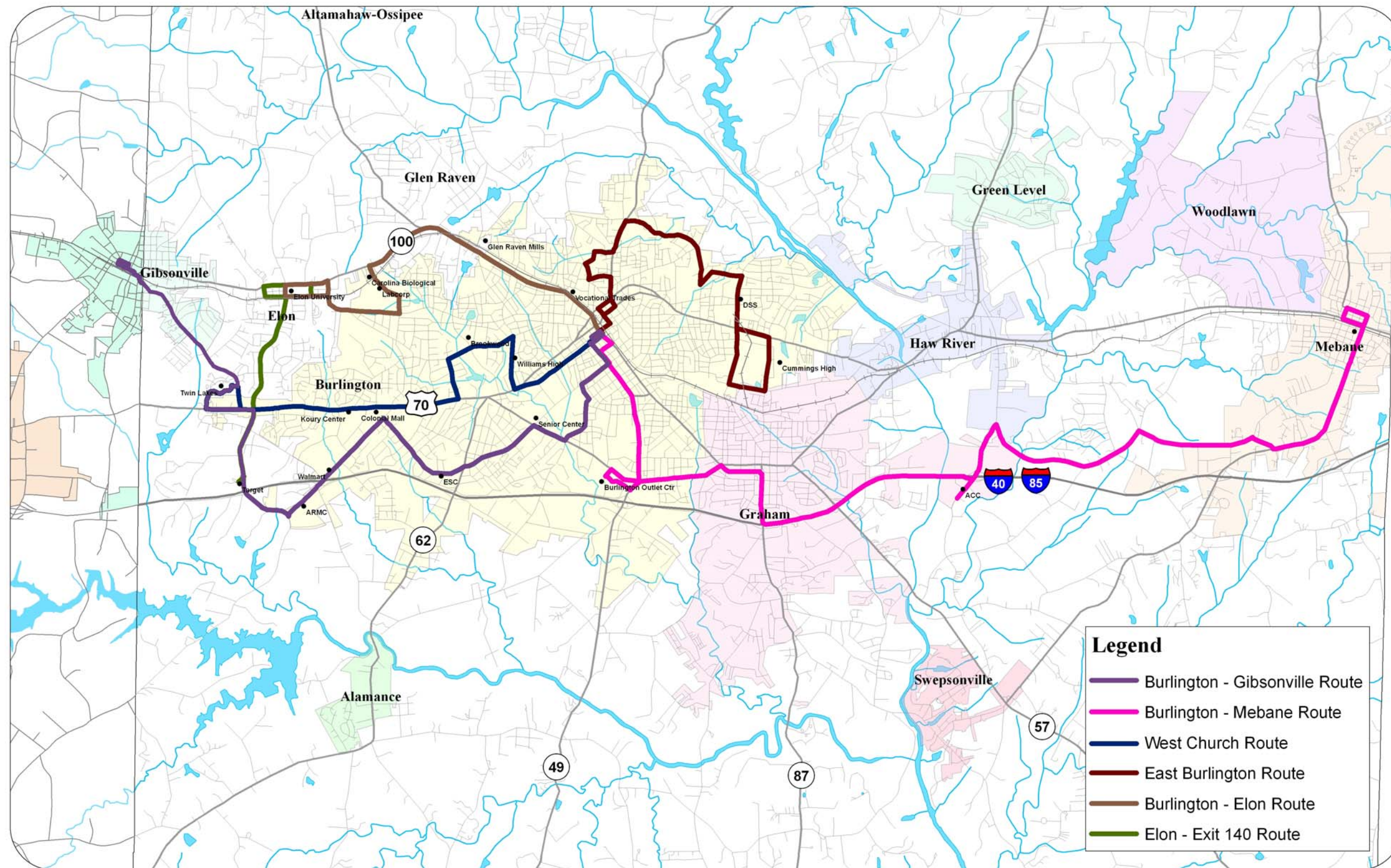


Figure E-2: Transit System Development Process

