

Pre-Paid Ridership Model Adjustment

Durham-Orange Light Rail Transit Project

Triangle Regional Transit Program
our transit future



September 2012

TABLE OF CONTENTS

TABLE OF CONTENTS.....	i
LIST OF TABLES	ii
1. Pre-Paid Transit Service in the Triangle Region	1-1
1.1. PRE-PAID TRANSIT SERVICE IN THE DURHAM-ORANGE LIGHT RAIL CORRIDOR	1-1
1.2. IMPACT OF PRE-PAID TRANSIT SERVICE ON TRANSIT RIDERSHIP	1-2
1.3. ACCOUNTING FOR PRE-PAID FARE IN RIDERSHIP MODELING	1-3
2. Financial Impacts of Pre-Paid Transit Service	2-1

LIST OF TABLES

Table 1.1 Pre-Paid Ridership By Route in Durham-Orange Light Rail Corridor.....	1-1
Table 1.2 Chapel Hill Transit Ridership Before and After Implementing “Free-Fare”	1-2
Table 1.3 Triangle Transit Ridership Increases Following Fare and Service Policy Changes.....	1-3

1. Pre-Paid Transit Service in the Triangle Region

Several major employers in the Triangle Region have demonstrated a strong commitment to providing pre-paid transit service to their employees and students. Pre-paid transit fares occur one of two ways in the Triangle Region:

1. “Fare Free” service – Since January 2002 the University of North Carolina at Chapel Hill (UNC) has had an agreement with the Town of Chapel Hill and the Town of Carrboro, under which UNC pre-pays approximately 60% of the fares for all ridership, the Town of Chapel Hill pre-pays approximately 30% of the fares, and the Town of Carrboro pre-pays approximately 10% of the fares on the system, creating a “Fare Free” environment for all transit riders. In 2010 Durham Area Transit Authority (DATA) implemented the Bull City Connector also as a “Fare Free” service in an attempt to boost economic development in downtown Durham. On any Chapel Hill Transit service or on the Bull City Connector, passengers simply walk onto vehicles and ride. No swiping or displaying of any fare media is required for any passenger.
2. GoPasses – Employers and Institutions purchase passes for their students and employees allowing them to ride any transit service provided by Triangle Transit (Triangle Region), DATA (Durham), Capital Area Transit (CATs) (Raleigh), and C-Tran (Cary) without paying a fare, although they do have to swipe a card.

Both of these pre-paid systems are fairly unique in that unlike most transit passengers the rider is not paying per use or per ride on the transit system. The fares are either paid by property taxes, by students of the universities as part of their fees, or by employers and provided as a benefit to their employees. In either case the transit system appears to provide “fare free” service to the rider since they are personally not paying for their trip.

1.1. Pre-Paid Transit Service in the Durham-Orange Light Rail Corridor

The Durham-Orange (D-O) Light Rail Corridor is a heavily traveled corridor linking UNC and the UNC Hospitals in Chapel Hill with Duke University, Duke Medical Center, downtown Durham and East Durham. See Table 1 which shows the pre-paid ridership by route by each of the transit agencies. Currently, there are six bus routes that operate directly in the D-O Light Rail Corridor, each of these six routes are planned to be replaced with the D-O Light Rail Project. In March of 2012, the average daily ridership on these six routes was approximately 6,700 of which approximately 6,000 trips were pre-paid trips.

Table 1.1 Pre-Paid Ridership By Route in Durham-Orange Light Rail Corridor

Provider	Route	Average Daily Trips	Average Daily Pre-Paid Trips	% of Trips that are Pre-Paid
Triangle Transit	400	841	339	40%
Triangle Transit	405	527	279	53%
Chapel Hill Transit	FCX	1,909	1,909	100%
Chapel Hill Transit	S	1,309	1,309	100%
Chapel Hill Transit	HU	432	432	100%
DATA	BCC	1,715	1,715	100%
Total		6,733	5,983	89%

Source: Triangle Transit - Average Daily boardings for March 2012.

1.2. Impact of Pre-Paid Transit Service on Transit Ridership

In January of 2002 Chapel Hill Transit began providing transit service in a manner that allowed anyone to ride Chapel Hill Transit without paying a fare for the trip. This resulted in a 76 percent increase in ridership from 2001 to 2003 as shown in Table 2.

Table 1.2 Chapel Hill Transit Ridership Before and After Implementing “Free-Fare”

Year	Average Weekday Unlinked Trips (Motor Bus)
2001	11,429
2003	20,078
Increase	8,649
% Increase	76%

Source: National Transit Database

Due to the successfulness of the Chapel Hill Transit pre-paid transit service UNC decided to expand the pre-paid transit program to faculty, staff, and students who live beyond the transit service area of Chapel Hill Transit. UNC initially accomplished this by purchasing 5,000 annual transit passes from Triangle Transit in July 2006, and distributing them to faculty, staff, and students who requested a pass at no additional charge, although transit is a line item on UNC’s student fees paid by all students whether they have a transit pass or not. The pre-paid annual transit pass became what is now commonly referred to as GoPass. Since 2006 the GoPass program has expanded to other large regional employers and institutions, most notably for the D-O Light Rail Corridor was Duke University in August 2011.

The GoPass program is one of several factors, which has led to an 85 percent increase in transit ridership on Triangle Transit buses in the D-O Light Rail corridor, from FY 2006 to FY 2012, see Table 3. Other key factors include significant increases in gasoline prices and bus route restructuring within the corridor to better serve the GoPass users and also major destinations in the corridor, including UNC, Duke Medical Center, and downtown Durham (which will be served by D-O Light Rail)¹. It is important to note that during this time period, headways for Triangle Transit service between Durham and Chapel Hill have generally remained unchanged during both peak and off-peak periods.

¹ Due to the rerouting of Triangle Transit service, it is difficult to provide a one-to-one comparison of routes. Prior to the route restructuring in 2010, routes 402/3 and 412/13 operated in a loop manner providing a one-seat ride between Durham, Chapel Hill, and Research Triangle Park. In 2010, these routes were divided into six routes that provide point to point service between Durham and Chapel Hill (routes 400 and 405), Chapel Hill and Research Triangle Park (routes 800 and 805), and Durham and Research Triangle Park (route 700).

Table 1.3 Triangle Transit Ridership Increases Following Fare and Service Policy Changes

Year	Triangle Transit Ridership in D-O Corridor	Routes
2006	371,775	402/403 and 412/13
2012	687,984	400, 405, 700, 705, 800, and 805
Increase	316,209	
% Increase	85%	

Source: Triangle Transit

1.3. Accounting for Pre-Paid Fare in Ridership Modeling

As discussed above, in the years following the implementation of “free-fare” service in Chapel Hill ridership increased by 76 percent. Similarly in the years following, employers/institutions initiating a program of pre-paid transit passes to employees and students as an incentive to use transit; ridership in the D-O Corridor increased by 85 percent on Triangle Transit routes.

Initial ridership modeling based on full fare for the D-O Light Rail indicated the light rail would carry 14,600 average weekday riders in 2035. This assumed an average fare of \$1.32 which was based on the fares from various fare types in 2005, when the model was validated. However, this average fare does not take into account the recent pre-paid phenomenon that 89 percent of the persons riding transit in the D-O Corridor are not the ones paying the fare. In an attempt to model the pre-paid phenomenon a model run was performed using 10 percent fare, since only 11 percent of the riders pay a fare for their trip. This resulted in 23,100 weekday riders on the D-O Light Rail in 2035.

The 23,100 average weekday riders in 2035 is a 58 percent increase over the average weekday riders based on the full fare, 14,600 average weekday riders. This was then compared to the empirical data from within the corridor for both Chapel Hill Transit and Triangle Transit. Compared to the 76 and 85 percent increases in ridership within the D-O Corridor it was determined that the 58 percent increase in ridership forecasted by the model is reasonable increase in ridership, and could even be considered conservative. As a result for this New Start application D-O Light Rail is assuming a 10 percent fare for ridership modeling purposes, and a full fare for the financial plan and revenue assumptions since the fares are being paid indirectly.

2. Financial Impacts of Pre-Paid Transit Service

Justifying building a major capital project to serve riders who will not pay for their trip, naturally raises questions regarding how the transit service will be funded. However, it is important to remember that the fare assumptions discussed above do not represent a change in fare policy or in the number of employers who will participate in the existing pre-paid transit programs. It is instead a discussion as to how to appropriately model the existing pre-paid phenomenon in regards to mode choice.

As discussed in section 1 there are two types of pre-paid transit service in the corridor today, Chapel Hill Transit offers “No Fare” transit service meaning that riders do not pay a fare. However, UNC and the towns of Chapel Hill and Carrboro do pay the fare for all of the riders on the Chapel Hill Transit system. This arrangement provided Chapel Hill Transit with \$7.3 million in fare revenues in FY 2010, or 46 percent of Chapel Hill Transit's annual operating expenses².

The second program is the GoPass Program, which currently has 11 participants. The program is set up so that Triangle area businesses who have 100 or more employees can provide this transit benefit to encourage employees to use area transit systems for their commute. Companies engage in a contract with Triangle Transit that requires employers to provide transit passes free of charge to their employees, while the employer pays a percentage of the full price fare for each commute trip taken. The contract stipulates that the participating employer will pay 50% of the full price fare in the initial year, 52.5% of full fare in year two, and 55% of the full price fare in all subsequent years. In FY 2011 GoPass boardings resulted in total revenue of \$1.5 million for Triangle Region area transit agencies, \$470,000 of which was for Triangle Transit³.

² National Transit Database

³ Memorandum to Triangle Transit Operations & Finance Committee from Triangle Transit Commuter Resources, *GoPass Program Review & Performance* January 2012.