Metropolitan Council

Program Evaluation and Audit

Discount Fare Program Review: U-Pass and College Pass

April 30, 2009

INTRODUCTION

Background

The Metropolitan Council offers two discounted transit pass programs to college students. The U-Pass program is a discount pass available to students at the University of Minnesota (U of M), and the College Pass (C-Pass) is available to students at other metro area universities that have agreements with the Council. Both programs offer students a deeply discounted pass that is purchased on a semester basis and provides unlimited rides to the cardholder.

The Council has had a student discount program with the University of Minnesota since 2000. In 2006, the Council started the C-Pass program with a limited number of colleges, and the program went fully operational starting fall 2007. As of spring 2008, Metro Transit had C-Pass agreements with 32 universities and colleges. However, the C-Pass program has grown significantly since the start of the audit, and 75 universities and colleges have agreements for C-Pass as of May 2009.

The U-Pass and C-Pass programs are administered differently. The U-Pass program is administered under a contract with the U of M which dictates a fixed fee. In return for the fee, the U of M may issue as many U-Passes as necessary to meet the demand of their student population. According to the U-Pass contract in effect in 2007, the U of M is responsible for U-Pass sales, production, distribution, marketing and all costs related to the U-Pass program. In 2007 there were nearly 43,000 U-Passes issued which equated to approximately 4.4 million rides in that same year.

At the time of the audit, the Go-To College Pass program was a consignment based program. Metro Transit assigns C-Passes to each participating institution and either cash for sold passes or unsold passes are returned to Metro Transit after a six week sale period. Metro Transit and the Council assist in the promotion, marketing and distribution of C-Pass cards. In 2007 there were nearly 4,200 Go-To College Passes (C-Passes) issued which equated to approximately 757,000 rides in that same year.

The goal of the C-Pass and U-Pass programs includes increasing ridership amongst college students in order to reduce regional congestion and promote environmental preservation. Furthermore, the programs aim to create new riders who will continue to use transit after college.

An audit of the U-Pass and C-Pass programs was requested to analyze the benefits and costs of the programs in order to assess their cost-effectiveness. In order to enumerate the various benefits and costs associated with the U-Pass and C-Pass programs, Audit reviewed applicable research on similar discount programs. According to the research, deeply discounted transit programs like U-Pass and C-Pass offer many potential benefits

to transit users, transit agencies and communities as a whole.[1] Potential benefits cited in research on discount programs include:

- Reduced costs through bulk sales
- Increased ridership
- Increased revenues & revenue stream reliability
- Reduced cash handling
- Creation of new transit riders
- Changed commuting behavior
- Reduced congestion & vehicle-related pollution

Research also indicates that the commuting characteristics of college students may result in lower costs associated with their ridership than that of the average commuter. For example, certain studies have shown that students ride transit at off-peak times more frequently than the average transit user, which decreases the overall per passenger subsidy for transit agencies.[2] This is the argument that college students are filling empty seats.

Audit started preliminary research and data collection for this review in June 2008. Due to ongoing negotiations for the U-Pass contract, the audit was put on hold until the new contract was settled in November 2008. Audit used data from the initial collection in June 2008, but this report includes information on program changes that occurred since the start of the review.

Purpose

The purpose of this audit is to review the U-Pass and College Pass programs in order to assess whether the benefits of the programs outweigh the costs.

Scope

The audit will estimate the effects of the U-Pass and College Pass programs on Regional ridership and revenues, and compare the costs attributable to the program with program revenues in 2007.

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[1] See:
Transit Cooperative Research Board. 2005. *Report 107: Analyzing the Effectiveness of Commuter Benefits Programs*. Washington D.C.: Transportation Research Board.
Nuworsoo, Cornelius. 2005. Deep Discount Group Pass Programs: Innovative Transit Finance. *Berkeley Planning Journal* 18: 151-165.
Brown, Jeffrey, et. al. 2001. Unlimited Access. *Transportation* 28: 233-267.
Ecola, Liisa and Michael Grant. 2008. Impacts of Transit Benefits Programs on Transit Agency Ridership, Revenues, and Costs. *Journal of Public Transportation* 11: No. 2.

[2] Brown, et. al., 2001.

Methodology

Data Collection

Interviews were conducted with:

- Metro Transit Finance staff
- MTS Planning staff
- Metro Transit Service Development staff
- Marketing staff

Audit reviewed the following information:

- U-Pass and C-Pass contracts
- NTD data
- Financial data & cost allocations
- Ridership data
- Research studies pertaining to transit demand and discount programs

Analysis

Audit conducted the following analyses:

- Estimated costs associated with U-Pass and College Pass ridership
- Compared full costs of program ridership to revenues
- Assessed how ratio of costs to revenues compares to other discount programs (Metropass)
- Used market survey data to estimate new and increased ridership attributable to U-Pass and College Pass programs
- Compared revenues attributable to new ridership to estimated revenues without program

Assurances

This review was conducted in conformance with *Government Auditing Standards* and the *Standards for the Professional Practice of Internal Auditing* of the Institute of Internal Auditors.

OBSERVATIONS

The U-Pass and C-Pass programs are creating new transit users and increasing ridership.

A central goal to the U-Pass and C-Pass programs is to increase ridership amongst students. Audit examined marketing surveys to determine how successful the programs have been at creating new transit users and increasing ridership. Table 1 includes data on the percentage of riders who indicated that they first tried transit because of the U-Pass or C-Pass programs.

Table 1. Estimating New Ridership from U-Pass & C-Pass Programs, 2007

	U-Pass	C-Pass
% New Riders	61%	27%
% Pre-existing Riders	39%	73%
Increased Ridership (passenger trips)	**2,683,119**	**201,404**

According to a 2008 survey of U-Pass holders conducted by the U of M, 61% of respondents indicated that they had not been bus riders prior to purchasing U-Pass. A smaller percentage, 27%, of C-Pass users indicated that they were new to using transit. The C-Pass information was collected in a Metro Transit marketing survey.

Audit used the indicated percentage of new transit users to estimate how many passenger trips could be attributed to the U-Pass and C-Pass programs as increased ridership. It was assumed that new riders and pre-existing riders used transit with equal frequency; a survey of all transit riders in 2006 supported this assumption as, on average, respondents indicated using transit with equal frequency regardless of how long they had been using transit. Audit estimates that, given the surveys indicating percentage of new riders, the U-Pass program increased ridership in 2007 by 2.68 million passenger trips and the C-Pass by more than 200,000 passenger trips.

The U-Pass and C-Pass programs increase transit revenues.

As stated above, marketing data indicates that the U-Pass and C-Pass programs are reaching students who are new to transit. However, the programs are also accessed by students who were already using transit. For these pre-existing transit users, there is some foregone revenue that should be evaluated. For example, the C-Pass data shows that 73% of pass users already accessed transit for commuting purposes. This 73% of riders would have paid for transit even without the C-Pass program, and given the steep discount for C-Pass, the pre-existing riders most likely would have paid more on a per ride basis.

Audit put together a scenario to estimate the net increase or decrease in revenues given the foregone revenues from pre-existing transit users. The rate of new and pre-existing transit users was applied to the number of passes sold for each program in each semester. Then, the average rides per U-Pass or C-Pass was multiplied by the number of passes

attributed to pre-existing transit users. The total number of rides for pre-existing transit users was then multiplied by the average fare paid system-wide in 2007 to estimate total lost revenues. Finally, net increase or decrease in revenues was determined by subtracting the estimated foregone revenues from program revenues. If program revenues are greater than lost revenues for pre-existing riders, then the program shows a net benefit. If foregone or lost revenues are greater than program revenues, then the program is creating a net decrease in fare revenues. Tables 2 and 3 show the estimated net revenues for the C-Pass and U-Pass programs in 2007.

Table 2. Estimated Foregone and Net Revenues for the C-Pass Program, 2007

	2007			
C-Pass	**Spring**	**Summer**	**Fall**	**Total**
C-Passes Sold	983	429	2,747	4,159
C-Pass Revenues	$143,671	$37,700	$395,545	$576,916
New rider passes (27%)*	262	114	731	1,107
Pre-existing rider passes (73%)*	721	315	2,016	3,052
Estimated foregone revenue (**A**)				$552,937
Net Increase (Decrease) in Revenue				**$23,979**

*Source: C-Pass survey 2006

A. Foregone Revenue Calculation	
Pre-existing Transit Rider C-Passes	3,052
Avg. Rides per C-Pass, 2007	182
Avg. System-wide Fare, 2007	$1.00
Foregone Fares per C-pass	$181.19
Total Estimated Lost Fares	**$552,937**

As Table 2 shows, the C-Pass program has increased overall revenues by $23,979. Estimated foregone revenues total $552,937 given that 3,052 C-Passes were sold to pre-existing transit riders. Audit estimates that for each C-Pass sold to a pre-existing transit rider, the Council would have collected $181. However, even with estimated lost revenues of $552,937, the C-Pass program still provides a net benefit as C-Pass revenues are greater than the estimated foregone revenues by $23,979.

Table 3. Estimated Foregone and Net Revenues for the U-Pass Program, 2007

	2007			
U-Pass	**Spring**	**Summer**	**Fall**	**Total**
U-Passes Sold	16,192	6,107	20,442	42,741
U-Pass Revenues	$776,699	$805,839	$791,479	$2,374,017
New rider passes (61%)*	9,877	3,725	12,470	26,072
Pre-existing rider passes (39%)*	6,315	2,382	7,972	16,669
Estimated foregone revenue (**A**)				$1,708,373
Increase (Decrease) in Revenue				**$665,644**

*Source: U-Pass survey 2008

A. Foregone Revenue Calculation	
Pre-existing Transit Rider U-Passes	16,669
Avg. Rides per U-Pass, 2007	103
Avg. System-wide Fare, 2007	$1.00
Foregone Fares per U-pass	$102.49
Total Estimated Lost Fares	**$1,708,373**

According to Audit calculations, the U-Pass program provides for a significant increase in net revenues. As Table 3 shows, the U-Pass program has increased overall revenues by $665,644. Estimated foregone revenues total $1,708,373 given that 16,669 U-Passes were sold to pre-existing transit riders. Audit estimates that for each U-Pass sold to a pre-existing transit rider, the Council would have collected $102. However, even with estimated lost revenues of $1.7 million, the U-Pass program still provides a net benefit as U-Pass revenues are greater than the estimated foregone revenues by $665,644.

Audit believes that the greater revenue benefit seen in the U-Pass program can be attributed to the fact that the program reaches more new transit users compared to the C-Pass program at the time of the audit. However, the C-Pass program has grown significantly since 2007 and it is possible that new market data would show the program is reaching a larger percentage of new transit users.

U-Pass and C-Pass riders pay less on a per ride basis than the average transit rider.

While the U-Pass and C-Pass programs increase overall revenue according to Audit analysis, the programs also allow students to pay a lower fare on a per ride basis than the average transit rider. Audit analyzed the fare discount for U-Pass and C-Pass programs by both estimating average fare paid per trip, as well as comparing the proportion of program revenue to the number of passenger trips attributable to program ridership. Also, the U-Pass and C-Pass fare discount was compared to the Metropass program, which is a deeply discounted commuter program offered to commuters through metropolitan area employers.

Table 4. Analysis of Per Ride Fare, 2007

	Fare Revenues	Rides (UPT)	Avg. Fare Per Ride	% Total Revenues	% Total Rides
System-wide Total	$86,430,254	86,787,647	$1.00		
U-Pass	$2,374,117	4,398,556	$0.54	2.75%	5.07%
C-Pass	$576,916	756,676	$0.76	0.67%	0.87%
Metropass	$19,637,107	9,509,132	$2.07	22.72%	10.96%

Table 4 shows the average fares paid in 2007 for U-Pass, C-Pass and Metropass programs. The system-wide total includes all fare revenues and passenger trips in 2007 on bus and light rail transit. In 2007, the average transit rider paid a dollar at the fare box. Both C-Pass and U-Pass programs provided significant fare discounts. C-Pass users paid $0.76 per ride and U-Pass users paid $0.54 per ride. The average fare paid by a U-Pass cardholder is significantly less than that paid by a C-Pass user.

Audit also looked at program revenues and passenger trips as a percentage of total system-wide revenues and rides. For example, U-Pass revenues represent 2.75% of total transit fare revenues, and ridership represents 5% of total system-wide ridership. In the case of both U-Pass and C-pass, the programs bring in a larger percentage of ridership than revenues.

Although the Metropass is a discount program, Audit found that it is not comparable to the C-Pass and U-Pass programs. Metropass fares are generally twice as high as the average system-wide fare. However, this difference is attributable to the commuting patterns of Metropass riders. For example, Metropass users are much more likely to ride transit during peak times, and to access express routes. Both express and rush hour transit services charge a premium over the base fare. Also, Metropass riders are more likely to ride point-to-point, and fewer transfers would increase the average fare paid per trip.

The U-Pass contract in effect in 2007 contributed to the low fare per trip.

Audit reviewed contracts for both C-Pass and U-Pass programs. The programs are structured very differently as the C-Pass revenues are based on number of cards sold, whereas U-Pass revenues are a set fee paid by the U of M in three installments throughout the year. The U-Pass contract in effect in 2007 included a clause indicating that the base price of the contract ($2.3 million in 2004) would increase at a set rate of 3.4% per year. At the same time, U-Pass ridership increased at a rate of about 10% per year between 2005 and 2007. The set increase in the U-Pass contract did not sustain program revenues with the rate of ridership growth, resulting in decreasing U-Pass fare revenues on a per ride basis.

Despite low fares per trip, C-Pass and U-Pass programs appear cost-effective when the commuting patterns of program users are taken into account.

The fare per ride paid by program riders is not a complete indicator of the cost-effectiveness of the discount program. Studies on discount programs have pointed to the

importance of commuting patterns in affecting the cost of ridership. Factors that affect the cost of ridership include average trip length and use of peak and non-peak service.

Audit found that U-Pass and C-Pass users are similar to the total transit population in using service during peak and off-peak times. Program participants were not more likely to use off-peak service, which opposes the idea that program participants are using excess transit capacity. However, C-Pass and U-Pass riders commute significantly shorter distances than the average transit user. Audit found that U-Pass and C-Pass users commute about four miles on average, which is roughly half the distance of the average commute as indicated in the 2006 Transit Rider Survey.

In order to account for the difference in average trip length, Audit calculated the average fare paid per passenger mile for the overall system and for the U-Pass and C-Pass programs. Table 5 shows the calculations.

Table 5. Analysis of Fare Rates Using Passenger Miles, 2007

	Fare Revenues	Annual Passenger Miles (APM)	Avg. Fare/APM	% Total Revenues	% Total APM
System-wide Total	$86,430,254	421,648,509	$0.20		
U-Pass	$2,374,117	11,012,017	$0.22	2.747%	2.612%
C-Pass	$576,916	1,894,378	$0.30	0.667%	0.449%

The average fare paid per passenger mile was $0.20 for the entire transit system. Audit found that U-Pass and C-Pass users generally paid more per passenger mile than the average transit user. The programs appear cost-effective given that, on average, C-Pass and U-Pass riders commute half the distance of other transit users.

C-Pass and U-Pass program revenues cover a smaller percentage of total program costs than the system-wide ratio of fare revenues to operating expenses. However, accounting for shorter trip distances brings the ratio of fares to expenses in line with the system-wide ratio.

Audit estimated the total cost of the C-Pass and U-Pass programs, and compared those costs to the program revenues. According to 2007 NTD data, fares paid on regional bus and light rail covered 31% of operating expenses. C-Pass and U-Pass revenues covered significantly less than 31% of ridership costs; U-Pass revenues covered 20% of costs and C-Pass revenues covered 22%.

Audit used route level cost data to estimate the costs of C-Pass and U-Pass ridership. Route level cost data was used in order to account for C-Pass and U-Pass users accessing regular route services that generally have a lower cost per rider.

Allocating light rail costs was a challenge as U-Pass program ridership was not estimated for LRT in 2007. In 2007, the U-Pass was still a magnetic card that did not have to be inserted in a ticket machine or touched to a rail card reader prior to boarding. Since that time, the U-Pass has been transferred to a Go-To pass that students are required to touch to a rail card reader prior to boarding the train.

In order to estimate U-Pass LRT ridership for 2007, Audit applied a percentage to 2007 bus data. In 2008, when U-Pass light rail use was tracked through Cubic, LRT rides were about 2.3% of bus ridership. Audit multiplied total bus ridership in 2007 by 2.3% to estimate light rail ridership. Audit also increased light rail ridership for both C-Pass and U-Pass users to account for the findings in audit report 2008-02, which indicated that only about half of all C-Pass and U-Pass users actually touch their card to a rail card reader prior to boarding the train.

Table 6 shows the estimates for total U-Pass and C-Pass ridership costs, as well as the percentage of those costs covered by program revenues. The total estimated cost of U-Pass ridership in 2007 was $11.9 million. For the C-Pass program, total ridership costs are estimated at $2.6 million.

In order to account for the shorter trip distances for C-Pass and U-Pass users, Audit applied several discount rates to the estimated total cost of ridership for the programs. Audit found that a 30% to 40% discount rate generally brought the ratio of fare revenues to expenses in line with the system-wide ratio.

Table 6. Total Estimated Costs of U-Pass and C-Pass Ridership, 2007

U-Pass						
Total allocated expense, bus				$	11,406,040.18	
Est. LRT expense				$	503,163.64	
Total Estimated Cost of Ridership				$	11,909,203.82	
Total revenue				$	2,374,116.50	
Revenue as % Cost					19.94%	
						Revenue % Cost
Distance Discount	@	20%	, cost	$	9,527,363.06	24.92%
	@	30%	, cost	$	8,336,442.67	28.48%
	@	40%	, cost	$	7,145,522.29	33.23%

C-Pass						
Total allocated expense, bus				$	2,415,880.87	
Est. LRT expense				$	211,955.38	
Total Estimated Cost of Ridership				$	2,627,836.25	
Total revenue				$	576,916.00	
Revenue as % Cost					21.95%	
						Revenue % Cost
Distance Discount	@	20%	, cost	$	2,102,269.00	27.44%
	@	30%	, cost	$	1,839,485.38	31.36%
	@	40%	, cost	$	1,576,701.75	36.59%

The new U-Pass contract, signed in November 2008, will increase program revenues. Furthermore, the new contract is structured to better enable revenues to keep up with ridership growth.

Metro Transit negotiated and settled a new U-Pass contract with the U of M in fall 2008. The new contract dictates that total contract price is based on estimated number of U-Pass cards to be sold multiplied by a fee per U-Pass. The program price per card is about $84. If average trips per U-Pass remain stable at 102 rides per U-Pass, as found by Audit for 2007, then the average fare per trip should be about $0.82. This is a significant increase from the $0.54 fare per trip paid in 2007, and it will also make U-Pass and C-Pass fares more equitable.

CONCLUSIONS

1. The U-Pass and C-Pass programs are successfully creating new ridership and revenue in a manner that appears cost-effective.

The U-Pass and C-Pass programs have been very successful at reaching college students who are new to riding transit. Marketing data shows that 61% of U-Pass users and 27% of C-Pass users did not access bus or light rail transit prior to the discount programs. Audit estimates that the two student discount programs created about 2.9 million new passenger trips in 2007. Audit also found that the programs increase overall transit revenues by reaching a large number of new transit users. While the fare paid by C-Pass and U-Pass users is very low on a per trip basis, the programs still appear cost-effective when the average trip distance is taken into account.

2. In 2007, C-Pass and U-Pass fares were not comparable and C-Pass users paid significantly more per ride than U-Pass users.

While both C-Pass and U-Pass users paid a very low fare on a per trip basis in 2007, the C-Pass users paid significantly more per trip than U-Pass users. U-Pass users paid just $0.54 per trip whereas C-Pass users paid $0.76; C-Pass students paid approximately 40% more per trip in 2007. The appearance of inequity in fares brings up issues concerning fairness when U of M students are provided a significant additional discount over and above the discount provided to other college students.

Audit recognizes that the U-Pass contract that was in effect at the time of the audit contributed to the fare inequality between C-Pass and U-Pass. In 2007, the contract fee for the U-Pass program was based on a set fee with a fixed annual increase of 3.4%. The U-Pass contract did not include any provisions to link the contract fee to the number of passes sold or other ridership metrics. As U-Pass ridership was increasing at approximately 10% per year, the contract was inadequate to ensure that U of M students pay a fare per ride comparable to that paid by C-Pass users.

3. The new U-Pass contract will significantly increase program revenues for the Council, and increase the per ride fare so that it is more comparable to the C-Pass program.

Since the start of this audit, the Council signed a new contract with the U of M for the U-Pass program. The new contract significantly increases the program fee, and the price of the contract is set based on a rate per U-Pass sold. Audit estimates that the new contract should increase the U-Pass fare per trip to $0.82, which is more comparable to the fare paid by C-Pass users. The new contract appears to be much more beneficial to Metro Transit than the U-Pass contract in effect in 2007.

RECOMMENDATIONS

Program Evaluation and Audit recommendations are categorized according to the level of risk they pose for the Council. The categories are:

- **Essential** – Steps must be taken to avoid the emergence of critical risks to the Council or to add great value to the Council and its programs. Essential recommendations are tracked through the Audit Database and status is reported twice annually to the Council's Audit Committee.
- **Significant** – Adds value to programs or initiatives of the Council, but is not necessary to avoid major control risks or other critical risk exposures. Significant recommendations are also tracked with status reports to the Council's Audit Committee.
- **Considerations** – Recommendation would be beneficial, but may be subject to being set aside in favor of higher priority activities for the Council, or may require collaboration with another program area or division. Considerations are not tracked or reported. Their implementation is solely at the hands of management.

1. Metro Transit should use the new U-Pass contract to ensure that fares for the C-Pass and U-Pass programs are comparable. (Significant)

Audit found that U-Pass users received a significant discount over and above the discounted fare paid by C-Pass users. The new U-Pass contract, which increases fare revenues, appears to address this inequity. Audit analyzed the new contract, and estimates that the U-Pass users will pay a fare more comparable to C-Pass users. However, Audit believes that Metro Transit should monitor program fees and ridership in future to ensure that the U-Pass and C-Pass programs are reasonably equitable.

Management Response*: The Metropolitan Council negotiated a new U-Pass contract with the University of Minnesota for the period of December 1, 2008 to September 30, 2013. This new contract included terms including: Base Price Per Year Annual Adjustments, Changes to Base Price Per Card, Annual Contracted Cards Adjustments and an Annual Contract True-up. These new terms promote program equity and will be used as a basis for future programs.*

Responsible: Ed Petrie, Director of Finance, Metro Transit
Estimated Completion: Ongoing