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**CONNECTICUT DEPARTMENT OF TRANSPORTATION
TITLE VI FARE AND SERVICE EQUITY ANALYSIS**

***CTtransit, CTfastrak, New Haven Line and Shore Line
East***

State Fiscal Year 2017 Fare Increase and Service Reduction Planning Process

August 2016

SERVICE AND FARE EQUITY ANALYSIS - FINAL STATEMENT OF IMPACTS AND MITIGATIONS

Federal Transit Administration (FTA) Circular 4702.1A requires that under Title VI of the Civil Rights Acts of 1964, the Connecticut Department of Transportation (CTDOT), as the owner of the *CTtransit* bus transit services and the *CTrail* New Haven Line and Shore Line East passenger rail services, must evaluate significant system-wide service and fare changes and proposed improvements at the planning and programming stages to determine whether those changes have a discriminatory impact on minority and low-income populations.

The proposals analyzed in this report offer a set of revenue and expense budget options that meet the intent of the Title VI guidelines of a relatively equal distribution of the impacts of changes while still meeting the demanding budget targets given to CTDOT.

Given a fiscal 2017 target of \$18 million of budget reductions from the public transportation budget, significant expense and revenue adjustments were necessary. Steps were taken to maintain all current bus and rail service levels with no service reductions at this time. In addition, to minimize service and fare impacts, CTDOT would look at ways to reduce costs and operate more efficiently.

However, even with some substantial reductions in non-service expenses categories, long term fiscal stability still necessitated fare adjustments with their inherent impacts on all customer populations. And in setting any fare increase, CTDOT would strive to set it at a level that maintained the customer's long-term share of the operating costs of the system.

The analysis contained herein shows that the approved fare increases were, after consideration of various alternatives, a last resort for the bus and rail budgets to be able to meet the budget targets assigned to them as their share of the overall CTDOT budget targets.

The income characteristics of users of the rail and bus systems in Connecticut are significantly different as the analysis will show. It should be noted *CTtransit* local bus customers currently pay among the lowest bus fares in the country even though Connecticut is one of the highest cost-of-living areas of the country, so the relative value of a bus ride is still very affordable. Even though the fare increases are being implemented, the impacts of the fare increases can be mitigated to some degree by the numerous multi-ride ticket options and to an additional extent by the new smart card fare-capping formula which will allow all customers to access the most favorable multi-ride discounts available. Income characteristics of rail riders varies significantly between peak and off-peak periods, but with the variety of off-peak fares offered, impacts of a fare increase on the relatively lower-income rail riders can be mitigated.

CTDOT's implementation strategies for proposed changes to rail and bus fares and service include a high level of public outreach in advance of making the changes in order to gather public feedback and input. The analysis presented herein, the hearings that will be held in the first half of September, and the opportunities offered for public comment via mail and email will be used to assess if the steps taken by CTDOT are adequate in addressing any disparate impacts of the fare increases, but also still meeting the real budget challenges facing the agency today.

In conclusion, FTA Circular 4702.1A states that a recipient “can implement a major service reduction or fare increase that would have a disproportionate high and adverse effect provided that it is demonstrated the action meets a substantial need that is in the public interest and that alternatives would have more severe adverse effects than the preferred alternative.”

The final fare proposals presented at the public hearings for rail and bus are a last resort for meeting the savings plans presented to CTDOT for the State Fiscal Year 2017 Budget. The goal was developing a package of fare increases that minimized the overall impacts on both bus and rail customers of the fare increase, and still provided the full complement of bus and rail services without any major reduction.

It has been concluded that the alternatives to a fare increase, such as cutbacks in service, would have a more severe adverse impact on all riders, but especially Title VI populations. In the final package, there is equity between the rail and bus modes, and between local and express bus modes that addresses any issues of disparate treatment.

Based upon these conclusions, the changes to the passenger fares for bus and rail as proposed will not have a disparate high or adverse effect on Title VI populations.

TITLE VI REGULATORY BACKGROUND

Title VI of the Civil Rights Act of 1964 protects people from discrimination based on race, color, and national origin in programs and activities receiving federal financial assistance. This analysis was conducted in compliance with Federal Transit Administration (FTA) Circular 4702.1A which requires that under Title VI of the Civil Rights Acts of 1964, the Connecticut Department of Transportation (CTDOT), as the owner of the CTtransit bus transit services and the New Haven Line and Shore Line East passenger rail services, must evaluate significant system-wide service and fare changes and proposed improvements at the planning and programming stages to determine whether those changes have a discriminatory impact on minority and low-income populations.

All changes in service meeting the definition “Major Service Change” are subject to a Title VI Service Equity Analysis and a public hearing prior to presentation to the Commissioner of Transportation for approval and implementation actions. The following are considered “major service changes” that would require a public hearing and a service equity analysis prior to approval by CTDOT:

1. A proposal to abandon all service on an entire bus route or rail line, or elimination of a route or a branch that reduces the span of service by more than five percent (5%);
2. A proposal to eliminate service on a portion of a bus route or rail line that represents more than twenty percent (20%) of the route miles of the particular route or line. (No major service change will be considered if alternative transit service is available on existing duplicative service provided by another transit provider or by transfer to another route, and if the elimination does not trigger any other threshold for a major service change);
3. A proposal to substantially reduce service on a bus route or rail line, specifically where reduction of service increases the headway of the peak period service by more than fifty percent (50%) or more than doubles the off-peak headway.
4. The addition of, or reduction in, more than ten percent (10%) of the rail or bus system’s overall vehicle revenue hours through one or more route changes

A Service Equity Analysis will be conducted whenever CTDOT implements a major service change to the rail or bus system as defined in this policy when it would remain in effect in excess of twelve (12) months. Further, when a service change is proposed, there shall be a twelve-month look-back to ascertain if the aggregate of any changes in the prior twelve months would have triggered one of these major service change criteria and therefore an equity analysis.

A Fare Equity Analysis will be conducted whenever CTDOT implements a fare change, regardless of the amount of increase or decrease, except for those fare changes mandated by Federal, state or local law. A fare change is defined as an increase or decrease in fares: (a) on the entire system, (b) on certain transit modes, or (c) by fare payment type or fare media.

The fare equity analysis will evaluate the effects of the proposed fare changes on minority populations and low-income populations. For proposed changes that would increase or decrease the fares on the entire system, or on certain modes, or by fare payment type or fare media, CTDOT will analyze any available information generated from ridership surveys indicating whether minority and/or low-income

riders are disproportionately more likely to use the mode of service, payment type or payment media that would be subject to the change.

In addition, CTDOT will be implementing a new account-based fare payment system using smart cards within the next six months. As a result of that implementation, a new fare tariff will be adopted. That new tariff must also be assessed in terms of fare equity.

BACKGROUND AND REASON FOR PROPOSED ADJUSTMENTS

CTDOT received significant cuts in the recently passed state budget for fiscal year 2017. CTDOT was required to develop a plan that reduced forecasted expenditures for fiscal 2017 by \$37 million. The Department reviewed the appropriated budget as a whole and ultimately offered a balanced financial plan which reduced overall estimated expenditures to available budget levels. The plan impacted both highway and public transportation elements of the budget. Given the scope of necessary adjustments, major and impactful changes were required in the overall CTDOT budget and by the bus and rail systems to meet those extraordinary targets. From the overall budget, road and bridge program reductions total about \$19 million and from the public transportation program, bus and rail reductions total about \$18 million. These will collectively balance the CTDOT budget.

POTENTIAL FARE AND SERVICE CHANGES

In developing the proposed final plan that is presented and analyzed here, several variations on a package of fare increases, service reductions, and non-service administrative reductions were analyzed in order to meet the combined target for public transportation.

Overall, the scenarios developed for the bus and rail fare increase and service reduction proposals represented a balance. A higher fare revenue target could result in the need for fewer service reductions. A lower level of fare increases would require higher levels of service reductions. The bus and rail packages considered these tradeoffs as the scenarios were developed.

The section that follows provides some detail on the various bus and rail savings plans including the various blends of fare increases and service reductions that were considered under each of the budget scenarios.

PHASE ONE ASSESSMENT

The budget reduction scenarios looked at a variety of approaches to reduce the forecasted deficits and were not initially centered solely on revenue generation as the primary means of meeting the subsidy targets needed to meet the budget reduction targets. The rail and bus operating budget line items were initially analyzed separately each with its own target for budget reductions.

Option One - Fare Increase Only

The first scenario developed was to cover the entire shortfall of approximately \$18 million, or a significant portion of it, through fare increases.

Even though rail and bus have almost an identical number of annual passenger trips, rail generates higher revenues because of the longer average trip length. The distance-based rail fares go up to much higher levels than the highest distance-based bus fares on the express bus system. Thus, the yield on a rail fare increase can be greater even though the percentage increase in fares is lower.

The “fare increase only” option for rails was calculated using a 10% increase on both New Haven Line and Shore Line East. The fare increases generated about \$12 million in additional revenues in fiscal 2017.

The “fare increase only” option for bus assumed an increase of the base bus fare from \$1.50 to \$2.00, representing a 33 1/3% increase. In addition, \$1 million of reductions would be made with no impact to CTtransit bus riders by reducing pass-through subsidies to the independent Transit Districts which represent about 25% of the total Bus Operations budget. The Districts might then raise fares or reduce services on their own in order to meet their new budget outlook. The bus fare increases and other savings generated about \$5.6 million in additional revenues in fiscal 2017.

Option Two – Expense Reductions Only

The second option developed relied only on expense reductions and no revenue increases. The initial version of that option for Rails reduced about \$3.1 million of service from Shore Line East and \$1.7 million in service from the New Haven Line during the fiscal year. In addition about \$7 million of non-service administrative and operational savings were required. At this level, there was minimal impact on the customer experience. Cutting these expenses any further would likely have resulted in some degradation of service quality. This option generated about \$15 million in savings in fiscal 2017.

For bus, the expense reductions targets, it required a reduction of about 98,000 annual hours of CTtransit-branded services. While the particular service cuts were unspecified, the reduction was the equivalent of \$4 million during fiscal 2017, or about 50 full-time bus drivers, with a proportional reduction in maintenance staffing due to the reduced number of buses. In addition, the same \$1 million subsidy reduction was passed along to the Transit Districts was included in this option. This option generated about \$5 million in savings in fiscal 2017.

Option Three – Combination of Fare Increases and Expense Reductions

The third option examined was an option that looked at a combination of fare increases and expense cuts. The rail fare increase level was set at 5%, service reductions were scaled back to about \$2.7 million for fiscal 2017, and \$7 million of non-service administrative savings was assumed. This option generated about \$16 million in budget savings in fiscal 2017.

The third option for Bus combined a \$0.25 increase in the base bus fare, or 16 2/3%, with \$1 million passed along to the Transit Districts for their action, and a reduction of \$2 million in CTtransit service. The level of service reductions translated to about 50,000 hours of CTtransit bus service annually or an

equivalent about 25 full-time bus drivers. This option generated about \$5.6 million in budget savings in fiscal 2017.

Analysis

Under the first set of fare savings scenarios presented above – Option 1 – rail fares would rise by 10% and bus fares would rise by 33.3%. It was quite clear that this method of distributing fare increases was very significant and that this method of distributing fare increases was going to place a significant burden on all riders of the transit system. The higher level of fare increases was removed from further analysis.

The second policy decision made was that there would be fare increases proposed, but that there could be no significant service reductions proposed. Any remaining shortfall would be made up with additional non-service administrative savings or operating adjustments elsewhere in the CTDOT budget, thereby preserving service while making savings in other non-service cost centers.

The fare increase options selected to be analyzed by the University of Connecticut included the Option Three alternatives of a 5% increase in rail fares and a 16 2/3% increase in bus fares. See Attachment A for the full UConn analysis. See Attachment B for the full Rail and Bus budget reduction plans, the fare increase portion of which was submitted to UConn for analysis. The final proposed package of fare increases that was analyzed by UConn and is being presented to the public at the September 2016 hearings is summarized in Attachments C – Bus Fare Structure, Attachment D - New Haven Line Fare Structure and Attachment E - Shore Line East Fare Structure.

ASSESSMENT OF EFFECTS OF FARE AND SERVICE PROPOSALS

The previous section discussed the process that was conducted to come up with a package of fare changes. While detailed analyses of impacts of the early proposals was not specifically conducted with respect to impacts on Title VI populations, the ultimate proposals sent for analysis and public hearing were developed in a Title VI context in order to assure that the package presented was not inherently flawed in creating disparate impacts, and that, even before detailed analyses in accordance with the Title VI guidance, there was not a built-in bias (that the agency was aware of) in how the proposed changes were designed and presented.

This section will look at the assessments of impacts on the Title VI populations for the fare change proposals that are going to public hearing.

As the UConn report (Attachment A) notes, a demographic categorization of routes system-wide can be completed based on minority status or low-income according to FTA guidance (> 33.33 % of route-miles traversing census block groups/tracts designated as one of the demographic categories). Such an analysis would provide insight into routes and corridors where the proposed fare increase could have greater impact. However, a route-specific fare structure is not feasible or desirable, and such an analysis would have little utility in evaluating the burden of the fare increase and whether it hurts certain groups disproportionately.

The UConn study used data from the recent 2016 Connecticut Statewide Travel Study (CSTS) and the 2015 Metro North Railroad Customer Satisfaction Survey, to analyze comparisons of household income with trip-making characteristics and fare-paying patterns. Local bus, express bus and rail customers were all analyzed separately to determine if there were disproportionate burdens being placed on the riders of any single mode.

As Figures 1, 2 and 3 in Attachment A show, the difference in household incomes by mode of transit use is striking. While nearly 30% of the rail trips reported in the CSTS survey were made by persons in households having an income of \$250,000 or more, nearly a quarter of local bus trips were reported by persons in households with household incomes under \$10,000. The income distribution for express bus service fell in between local bus and rail, with the majority of the reported trips being made by persons in households with incomes between \$60,000 and \$150,000.

As Figure 4 in Attachment A shows, there is a difference in income between rail trips taken during the peak versus off-peak period:

In the AM Peak period over 75% of those riders providing income information have household incomes greater than \$100,000. In the Off-Peak this drops to 56%, and on the weekend the highest income categories account for 45% of the ridership.”

The complications in analyzing the impacts of fares across modes is challenging in that each of the modes has a different fare structure that is not precisely comparable. Local bus has a flat rate fare, and express bus service and rail have zone-based fares generally related to trip length. Given the issues of comparability, CTDOT and UConn analyzed the proposed fare increase in several different ways utilizing several different demographic comparisons.

1. Equity analysis of the proposed local bus fare increase internally, i.e., is there equitability within the various fare categories and how different populations pay for their fares that might create a disparate impact or disproportionate burden;
2. Equity analysis of the proposed express bus fare increase internally, i.e., is there equitability within the various fare categories, with how different populations pay for their fares, and when compared with the local bus fare is a disparate impact or disproportionate burden created;
3. Equity analysis of the proposed rail fare increase internally, i.e., is there equitability within the various fare categories and how different populations pay for their fares that might create a disparate impact or disproportionate burden;
4. And finally, equity analysis comparing the proposed rail and bus fare increases with each other that might indicate a disparate impact or disproportionate burden;

For the first three areas of analysis listed above, in general there is no disparate impact or disproportionate burden beyond the basic impact that any fare increase would have. All fares are being raised within any mode by the same percentage. And beyond some minor differences due to rounding, all fares based upon multiples of the one-way fare are also being raised by the same percentage. So, internal to each mode, no fare category offers an inherent advantage or disadvantage. And no multi-ride ticket option is being re-priced in a way that might create an inherent advantage or disadvantage for any group.

When comparing local bus and express bus in option 1 and 2 above, while the same percentage increase is being applied to both, express bus fares would go up by a larger nominal amount. Therefore, relatively speaking, express bus riders will be making up a larger proportion of the funding gap compared to local bus riders. That difference seems equitable in that a lower contribution is being charged to riders of the local bus system and who have lower average incomes than express bus riders.

The more difficult analysis for equitability is in comparing the relative impacts of the proposed rail and bus fare increases. Two key indicators, household income and trip distance, were used to compare impacts of the bus versus rail fare increase proposals.

From the UConn study:

Given that two of the services have zone-based fare structures (which are a function of distance) a straightforward and appropriate means of comparing the services is on a per-mile basis. The mileage between two stops is assumed the shortest path distance and does not account for any substantial deviations from this path by local bus routes.

Costs in these examples for the various services are based upon a single ride cash payment (at the station for rail service). It is assumed that these costs will accurately reflect any differentials in other pass categories, that is, that discounts for multi-day passes will be consistent across modes.

The UConn analysis compared a 40-mile express bus trip with a 40-mile intrastate rail trip to determine if there were any relationships between rail and express bus that were worthy of further analysis to determine disparate impact. The analysis also looked at a “short-trip” analysis, comparing a four mile local bus trip, a four mile express bus trip on the route 917, and a four mile rail trip.

Their findings are:

... (I)t appears that on a per-mile basis the (service on the) NHL is less impacted by the fare increase than trips on express routes of equivalent distance. And while on longer-distance trips the NHL fare is still higher, the increase is nearly double for express bus services on a per-mile basis. It appears that Impacts on a per-mile basis tend to be about twice as high for Express service than for local bus or rail service.

Scatter diagrams were prepared (see Figures 8 and 9 in the UConn report) plotting the various per mile fares for all possible trips on local bus (Figure 8 only), express bus and rail. The conclusion from the analysis of trip length is that express bus customers shoulder a larger portion of the burden on a per-mile basis than local bus riders. But express bus riders tend to have higher incomes and can better absorb that higher cost. Interestingly, the report concludes “express bus continues to shoulder more of the burden on a per-mile basis (than rail) for nearly all trips up through 40 miles (which is the longest express bus trip).”

Even including the disparity of the express bus fare per mile when compared to rail based on the proposed fares, there seem to be only a few areas where there is any minor difference in overall current or proposed fares based on cost per mile.

UConn then used household income as a metric to compare the cost of the increase and the overall cost of a trip based upon household income of the customers.

The first step in using household incomes as a comparator for rail versus bus fares was to decide what to use for the modal fares. It was decided to use distance-based fares. Quoting from the UConn study,

According to the 2016 CSTS, the following are average trip lengths on the various transit modes:

Local bus: 7.1 miles

Express bus: 13.1 miles

Metro North: 40.7 miles

Shore Line East: 33.3 miles

These average trip lengths were then used to develop daily, weekly, monthly and annual costs based on the proposed fare increase in order to see the relative impacts of the nominal cost increases. That number would then be used in the next comparison of impact based on household income.

Table 1 is an excerpt from the UConn report and shows the results of this average trip length distance-based equity comparison.

Table 1: Cost Impacts of Proposed 16% Bus and 6% Rail fare increases

Service (average Trip)	Single Ride Cost Increase (\$)	Weekly Pass Increase (\$)	Annual Pass Increase (\$)	New Single Ride Cost (\$)	Total Weekly Pass (\$)	Total Annual Pass (\$)
Local Bus (7 miles)	\$0.25	\$2.75	\$108.00	\$1.75	\$19.25	\$756.00
Express Bus (13 miles): Route 901 from Consitution Plaza to Maple Glen/Dowd Ave.	\$0.60	N/A	\$244.80	\$4.10	\$45.10	\$1,672.80
Metro North/NHL (41 miles): New Haven to Stamford	\$0.50	\$4.00	\$114.00	\$8.00	\$68.00	\$1,968.00
MNR/NHL (35 miles): Stamford to GCT	\$0.90	\$9.00	\$228.00	\$15.40	\$154.00	\$3,984.00
SLE (33 miles): Old Saybrook to New Haven	\$0.45	\$3.75	\$103.20	\$7.20	\$64.50	\$1,807.20

The costs shown indicate that the trip with the highest fare increase impact is an express bus trip of 13 miles, higher even than a 33 mile rail trip.

The next step in this phase of the analysis was to use average household income as a comparator for the purpose of assessing the equity of impact on the household budgets of the various transit customers.

The 2016 CSTS was used to calculate the average income of riders on each of the service types, also making a distinction between MNR and SLE. Categorical income data were collected in the 2016 CSTS. In order to provide an average value, it was assumed that responses were uniformly distributed within each category, allowing the midpoint income of that category to be used in the analysis. For the top income category of “Greater than \$250,000”, a value of \$350,000 was used in these calculations. The average household incomes by service are as follows:

Local bus: \$30,452

Express Bus: \$70,452

MNR: \$174,048

SLE: \$143,076

Two different comparisons were then made to measure the impact on customers – the fare increase as a percentage of the customer’s household income and the full cost of the fare as a percentage of household income.

Again excerpting from the UConn study:

These income estimates were used to prepare Tables 2 and 3, which depict the annual increase in service cost as a percentage of annual income (Table 2) and the total service cost as a percentage of household income (Table 3).

Table 2: Annual Service Cost – Fare Increases as a percentage of HH Income

Service (average Trip)	
Local Bus (7 miles)	0.35%
Express Bus (13 miles): Route 901 from Consitution Plaza to Maple Glen/Dowd Ave.	0.35%
Metro North/NHL (41 miles): New Haven to Stamford	0.07%
MNR/NHL (35 miles): Stamford to GCT	0.13%
SLE (33 miles): Old Saybrook to New Haven	0.07%

Table 3: Total New Annual Service Cost as a percentage of HH Income

Local Bus (7 miles)	2.13%
Express Bus (13 miles): Route 901 from Consitution Plaza to Maple Glen/Dowd Ave.	2.37%
Metro North/NHL (41 miles): New Haven to Stamford	1.13%
MNR/NHL (35 miles): Stamford to GCT	2.29%
SLE (33 miles): Old Saybrook to New Haven	1.26%

Table 2 suggests that regardless of the fare increase structure, the impact of the annual service increase is least for intra-state MNR travelers and SLE. This is due to the substantial difference in the average household income of MNR and SLE riders versus local and express bus. It also reflects the deeper discounts associated with the rail services as opposed to the proposed Express and Local bus weekly and monthly passes.

In Table 3, total annual costs are presented. MNR intra-state trips have the lowest cost as a percentage of Household income. For example, from New Haven to Stamford on MNR will result in a total annual cost of \$1,968, which as a percentage of an average household income of \$174,048 is approximately 1.13%.

It is to be expected that the higher household incomes among rail commuters would mean they are paying a lower percentage of that household income for their transportation expenses. As a more or less fixed consumable, the pricing of transportation is regressive in that regardless of income, all customers pay the same price. But that in and of itself does not create a disparity that needs to be addressed. However, one of the conclusions of the UConn analysis of the trip length and household income analyses was that the express bus customers pay more by almost any measure than a similar rail customer. That is largely due to the fact that rail monthly commutation tickets are discounted almost 50% from the one-way base fare whereas express bus monthly or 31-day passes are discounted less than 20%. That is one disparity that could be addressed in the future, but that disparity does not specifically affect Title VI populations or services.

EQUITY ANALYSIS FOR ADA PARATRANSIT

As a provider of fixed-route bus transportation, in accordance with the Americans With Disabilities Act (ADA) CTDOT must provide complementary curb-to-curb transportation for those individuals who cannot, due to a disability, access normal fixed-route bus services. CTDOT policy, in accordance with the maximum fare suggested by FTA regulations, has been to charge a fare of double the base bus fare for

ADA customers. As the bus fare goes up in this proposal, so will the ADA fare, from \$3.00 to \$3.50 based upon the increase in the local bus fare from \$1.50 to \$1.75. There are no survey data regarding income or minority status of ADA customers in Connecticut, but the assumption has always been that due to the higher unemployment rates of people with disabilities, and the fact that many are senior citizens with low or limited income, that ADA would always be subject to an examination of disparate impact based on income.

The ADA Paratransit program requires a subsidy of almost \$38 million annually and is the fastest growing line item in the CTDOT budget.

A fare increase of 16 2/3% for a customer with a limited-income is significant. To help mitigate that fare to some degree, CTDOT does offer a 10-trip ticket book for ADA customers at a discount of 20% which is the largest discount offered to any bus customer. That discount was increased from what was formerly a 10% discount during the last round of fare increases as a way to mitigate the impact on ADA customers. It was decided at this time not to offer any deeper discount, nor to break away from the policy that ADA fares would always be double the base bus fare. Finally, ADA paratransit covers less than 5% of its costs from fares, so the user is paying the smallest portion of the cost of all modes.

While the ADA fare increase will have an impact on customers, CTDOT determined that any further mitigations cannot be addressed and still have the overall program meet budgetary and service level goals.

EQUITY ANALYSIS FOR NEW FARE TECHNOLOGY SYSTEM SMART CARDS

The introduction of the new fare technology system and the smartcard, using an account based system, will allow CTDOT to employ a fare-capping algorithm that will allow an almost universal availability of every ticket type to every type of customer. The way the algorithm operates, it will optimize the fare discount by any user by analyzing ridership patterns and offering the best price possible over the range of discounted passes currently available on the system.

With the fare-capping and smart card system, the most deeply discounted passes which tend to be the longest term passes, will now be available to customers who may not have the cash to lay out in advance. So, for example, rather than having to pay in advance for a 31 day pass at \$54, a customer can replenish their account in \$10 or larger increments over the course of the 31 days and still get all the pricing benefits of the maximum discount.

Smartcard accounts can be replenished at customer information booths in the major cities, at over 800 retail outlets, at ticket vending machines, by automatic deduction from a bank account, or by credit card either by automatic deduction or online, so there is no requirement to have a bank account or a credit card in order to replenish your card's value.

Overall, the fare-capping algorithm allowed by the smart card system will almost entirely eliminate unavailability of cash as a barrier to accessing the best fares, which will be a significant benefit to low-income populations including the elderly and people with disabilities who ride buses rather than paratransit.

CONCLUSIONS

The UConn analysis came to several conclusions from their analysis and also offered some thoughts on future activities that might be considered to improve any real or perceived inequity overall in the CTDOT transit fare structure.

UConn Findings

There are three key findings from this equity analysis of the proposed fare increase on CTDOT Public Transportation Services:

- 1) There is a significant difference in income distribution depending on the type of service being used by travelers in Connecticut. Rail passengers tend to have very high household incomes, whereas local bus users tend to have low household incomes. Express Bus users' income distribution is in-between Rail and Local Bus.
- 2) There is evidence to support the assumption that the proposed smart card system can benefit low-income riders and help to mitigate the impact of the proposed increases, especially if deeper discounts are built into the express and local bus weekly and monthly passes.
- 3) The proposed 16.67% increase to bus fares and 6% increase to Rail fares may disproportionately burden low-income households when the increases are viewed from a per-mile perspective. Deeper discounts associated with weekly and monthly passes may mitigate these effects and promote increased pass usage amongst lower-income riders.

Recommended future study

In addition to adopting the planned smart card system, CTDOT is encouraged to adopt a vertical equity perspective that looks to achieve equality in the outputs of the fare increase. To this end, household income characteristics of the riders of the three different modes should be taken into consideration and the burden allocated across modes accordingly. This would appropriately reflect the ability of the passengers of these modes to absorb increased costs. To this end, several analyses may be appropriate:

- 1) Evaluation of alternative fare increase scenarios.
- 2) Evaluation of alternative fare structures, including a comprehensive fare structure across all modes.
- 3) Evaluation of weekly and monthly pass discount regimes.

ACTIONS TO MINIMIZE IMPACTS

As a result of the policy decisions made prior to this Fare Equity analysis, a reasonable solution was presented regarding the balancing of fare increases and service changes. CTDOT's required targeted savings can be met with an appropriate fare increase and without the need to reduce significant levels of service that affect the customers.

In an environment of potential fare increases, the possibility of any service reductions would have been received very poorly. While there still might be some normal level of service adjustments over the course of the year as a result of routine service reviews, any proposals for widespread service reductions, and their related impacts on ridership and customer access are not necessary.

Recommendations for Bus Fares – Immediate and Longer Term

Bus fares have only gone up by an average of less than 2% a year over the past 12 years. After January 1, 2012, CTDOT recommended a "shared impact" policy that would keep the fare recovery ratio relatively constant year to year, with the taxpayers in general and the bus riders both sharing in covering any inflation of operating expenses. Implementing fare increases gradually over a period of time would be preferable to a 16 2/3% increase at one time, thereby lessening any sudden financial impact on customers. But with multiple years between fare increases, the larger increases are almost unavoidable. This fare increase would maintain the riders' share of the cost of the service in accordance with the CTDOT goal.

The final fare proposals meet the standard for balancing the public interest with the level of fare changes proposed. The first proposals for bus fare increases had options to raise fares by as much as 33.3%. Clearly this was a level of increase that would be a burden on all riders. Further, the local bus and express bus fares were raised at the same levels. While this impacted the higher income express riders at the same percentage level as the lower income transit riders, express riders pay a higher amount in nominal dollars and have a higher average income with which to pay those higher costs.

A significant mitigation step for the bus fare structure is the "fare capping" that will take place when the new smart card fare payment system is implemented early in 2017. Fare capping will assure that any card holder is paying the most economical fare possible. As pointed out in the UConn analysis, low-income customers are already buying pre-paid fares at a higher rate than other customers, but it tends to be the shorter-term tickets such as one-day, five-day or ten-trip tickets. Now, with the fare capping in the new tariff, the deepest discounts will be available to any card holder, not just those who can purchase the most expensive passes and tickets. CTDOT's new smart card and the fare capping will allow a whole array of new types of passes to be available to all rider groups including one-day and multi-day passes for express routes, youth two hour and all-day passes, senior/disabled multi-day passes for shorter than the 31-day or monthly pass, and senior-disabled passes for all express ticket types. See Attachment C for the current and proposed fare structures and the new ticket types available with fare-capping when smart cards are implemented.

While any bus fare increase will have an impact on minority and low-income populations, it has been determined that this fare increase does not have a disparate impact or disproportionate burden on any

population, and with the mitigation provided by the fare-capping when the smart card is introduced, any impacts will be minimized.

Recommendations for Rail Fares – Immediate and Longer Term

The recommendation was for a 5% fare increase in the basic fare plus the statutorily-mandated surcharges to pay off the bonds for the M8 rail cars (1.0% originally mandated for January 2017, but will be implemented at the same time as any rail fare adjustment this year).

After January 1, 2012 it was recommended to adopt a “shared impact” policy that would keep the fare recovery ratio relatively constant year to year, with the taxpayers in general and the rail riders both sharing in covering any inflation of expenses through small annual fare increases and similar small increases in the subsidy levels. The M8 fare surcharge would be implemented over and above the annual inflationary fare increase.

There is no proposed further mitigation to be made to rail fares to limit the impact on target populations. While the rail service does serve many minority and low-income Census tracts, and under the FTA guidelines is defined as a minority and low-income service, the fares that are charged do not disproportionately impact these populations. The one area where further analysis will be done in the future is the relationship between the one-way cash fares and the multi-ride tickets. Similar to the fare-capping for bus, the relationship between the different ticket types may provide an opportunity to mitigate impacts of current or future fare increases.

EXHIBIT A:

University of Connecticut: t-HUB

Fare Equity Analysis 2016

August 11, 2016

The evaluation of the fare structure increases across the Connecticut Public Transportation System will impact nearly all users of the Connecticut transit system. Coupled with the introduction of the smart card system, there are substantial changes that need to be considered from an equity perspective. Several assumptions will form the basis of this analysis and the approach to evaluating the fare increases:

- Bus fare increases will be approximately 17%, whereas rail fare increases on SLE and NHL will be 6%.
- Smart card deployment will serve as a mitigation measure, given that the lowest possible fare is applied to a system user and that acquiring a card is free.

The individual demographic categorization of routes system-wide can be completed based on minority status, low-income designation or limited English proficiency (LEP) according to FTA guidance (> 33.33 % of route-miles traversing census block groups/tracts designated as one of the demographic categories). This analysis would provide insight into routes and corridors where the proposed increase could have greater impact, however, since a route-specific fare structure is not feasible or desirable, would have little utility in evaluating the burden of the fare increase and whether it hurts certain groups disproportionately.

Rail and express services tend to serve more affluent users in less ethnically diverse neighborhoods. Figures 1, 2 and 3 depict the HH income distribution of users of the three types of transit systems in Connecticut (source: 2016 Connecticut Statewide Travel Study). These graphs are based upon revealed data from the 2016 CT Statewide Travel Study. A stratified random sample was used to recruit over 8400 households to complete a trip diary for a preselected, randomly assigned travel day in spring 2016 (March – May). Travel dates were limited to Tuesdays, Wednesdays or Thursday – and therefore these results represent midweek travel patterns and are thereby focused more on commute trips. It should further be noted that these charts are made based upon the *first* transit trip made by a household member on the assigned day – subsequent trips are not included in this analysis. The number of subsequent trips is relatively small (with the exception of return trips) and does not substantially impact the analysis.

We will treat Local Bus, Express Bus and Rail as three separate categories to determine if there are disproportionate burdens being placed on the riders of any single mode. We can then use these categories to examine the demographic and socio-economic characteristics of the ridership of the modes in an attempt to identify any burdens being placed on protected populations.

There are a total of 983 local bus trips represented in the dataset, 478 rail trips (452 MNR, 26 SLE) and 116 Express Bus trips. Dial-a-ride, Amtrak and private bus were not included in the analysis (with the exception of express routes executed by private bus contractors).

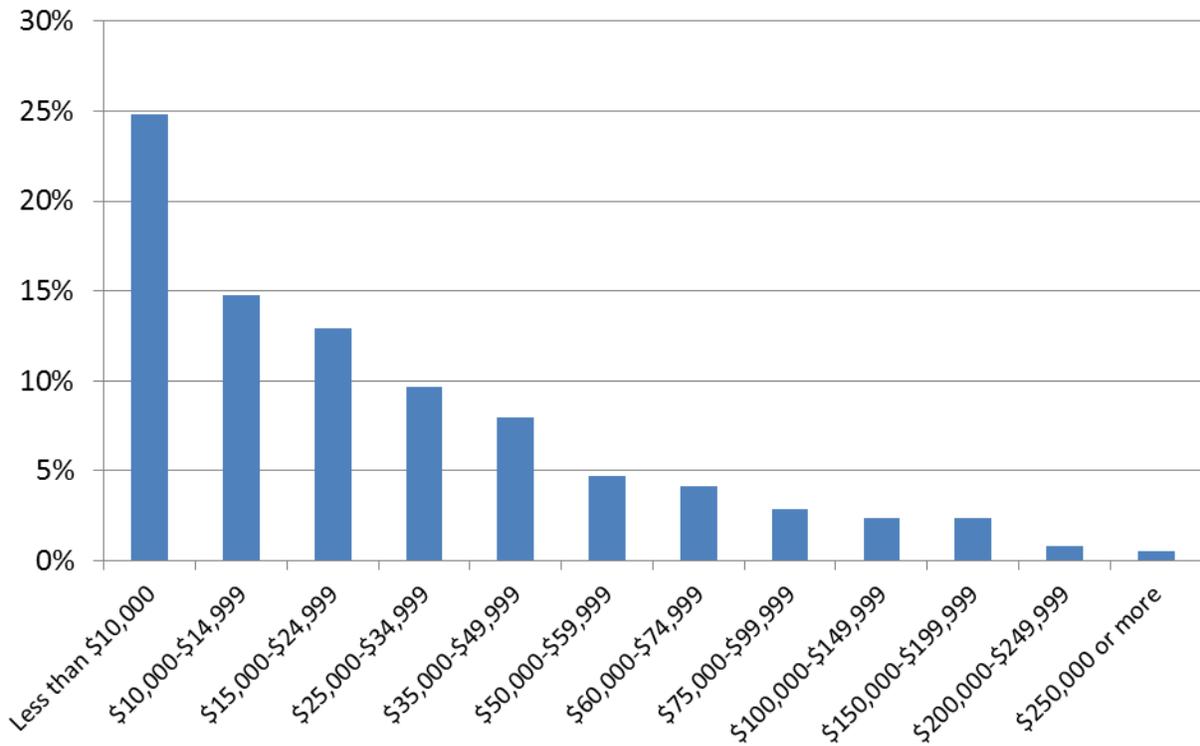


Figure 1: Distribution of local bus trips by household income (Source: 2016 CSTS)

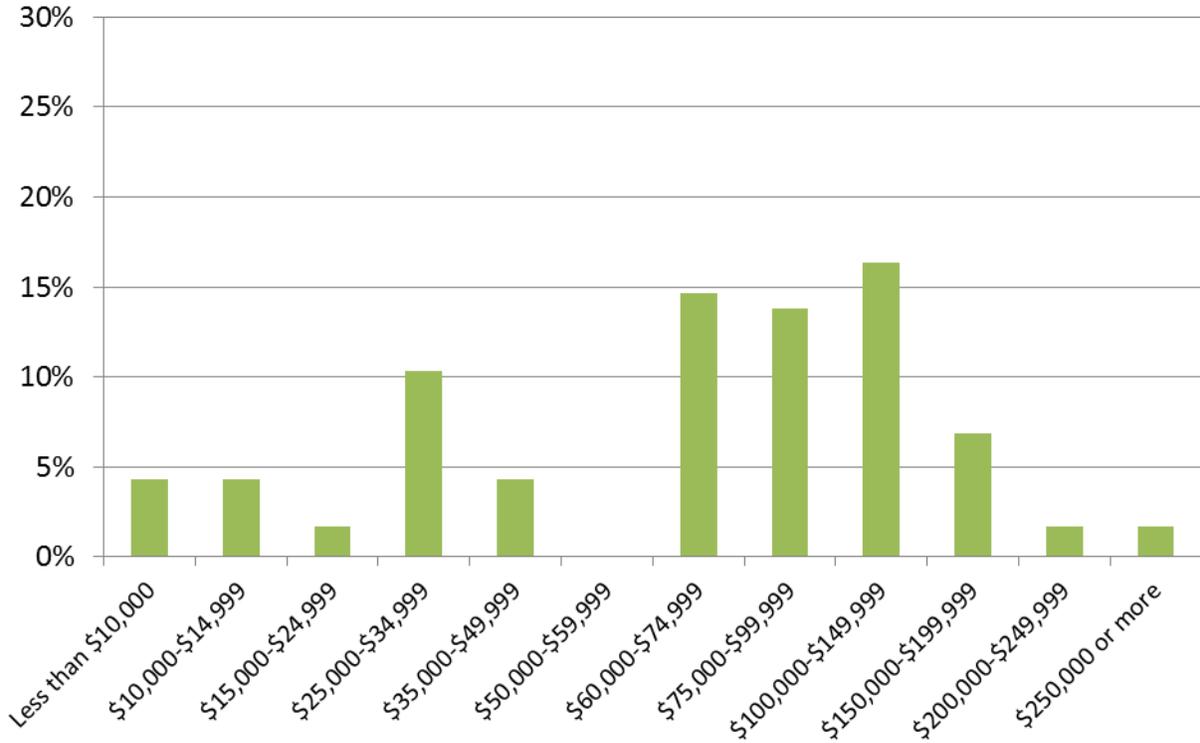


Figure 2: Distribution of express bus trips by household income (Source: 2016 CSTS)

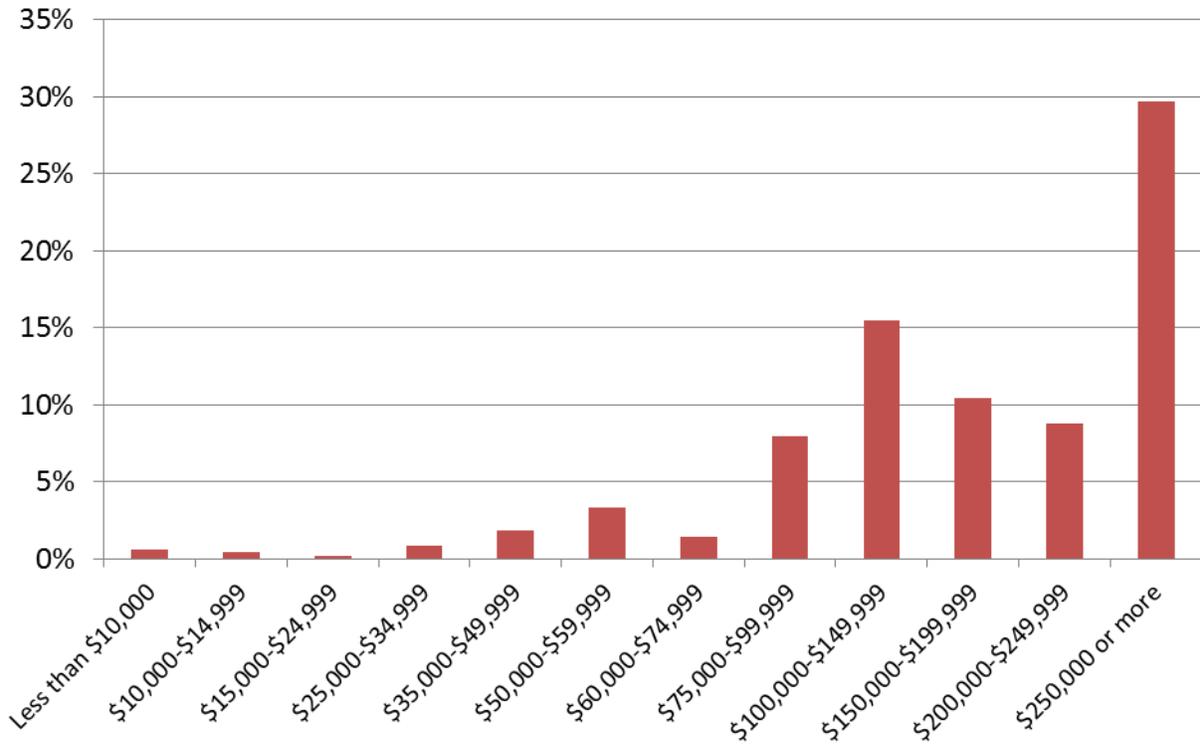


Figure 3: Distribution of rail trips by household income (Source: 2016 CSTS)

The difference between the distributions is striking – nearly 30% of the rail trips collected by the CSTS were made by persons in households having an income of \$250,000 or more (Figure 3). This is undoubtedly due to the heavy usage of the corridor in Fairfield County to access jobs in downtown New York City. In contrast, nearly a quarter of local bus trips were reported by persons in households with household incomes under \$10,000 (Figure 1). Consistent with its characteristics as a blend between express rail service and rubber-tire rolling stock, the express bus service captures an income distribution that is more consistent across the ranges of income, with the majority of the reported trips being made by persons in households with incomes between \$60,000 and \$150,000.

The income distribution of MNR riders in Figure 4 reinforces the impression of a high-income ridership, especially during the AM Peak. In the AM Peak period over 75% of those riders providing income information have household incomes greater than \$100,000. In the Off-Peak this drops to 56%, and on the weekend the highest income categories account for 45% of the ridership.

These modal distinctions provide a useful way to evaluate the burden placed on system users with the fare increase – each of the modes has a different fare structure, with local bus having a single fixed fare, express service a zone-based structure, and rail a zone-based structure that is slated to receive a smaller increase in fare.

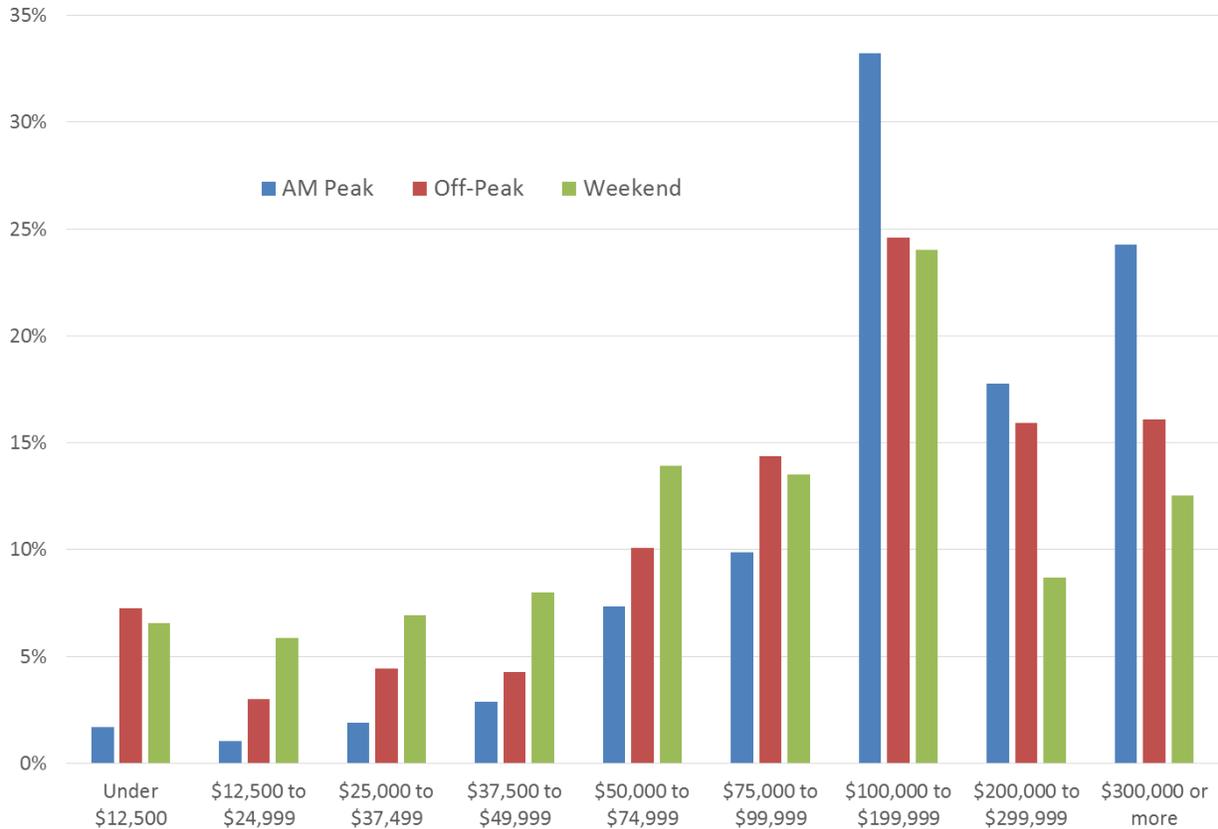


Figure 4: Income Distribution of MNR ridership by travel period (Source: 2015 MNR Customer Satisfaction Survey)

Smart Card Adoption amongst Low-Income Households

Earlier, an assumption about the mitigation qualities of the new smart card system was made. That is, that the introduction of the smart card fare payment system with its embedded algorithm to apply the cheapest fare based on usage during a rolling 31-day period, will benefit low-income users because it allows users to capture the discounts associated with, for example, a 31-day pass, without having to cover the entire cost of the pass at the beginning of the period.

A question arises regarding the uptake of smart cards for payment and whether this mitigation strategy will reach those that need it most. Both trip and person data from the CSTS were utilized below to examine this question. In Figure 5, the fare payment method reported by transit users is shown. It is important to note that these results are based on respondents that reported using transit at some point – not those that used transit on their assigned travel date.

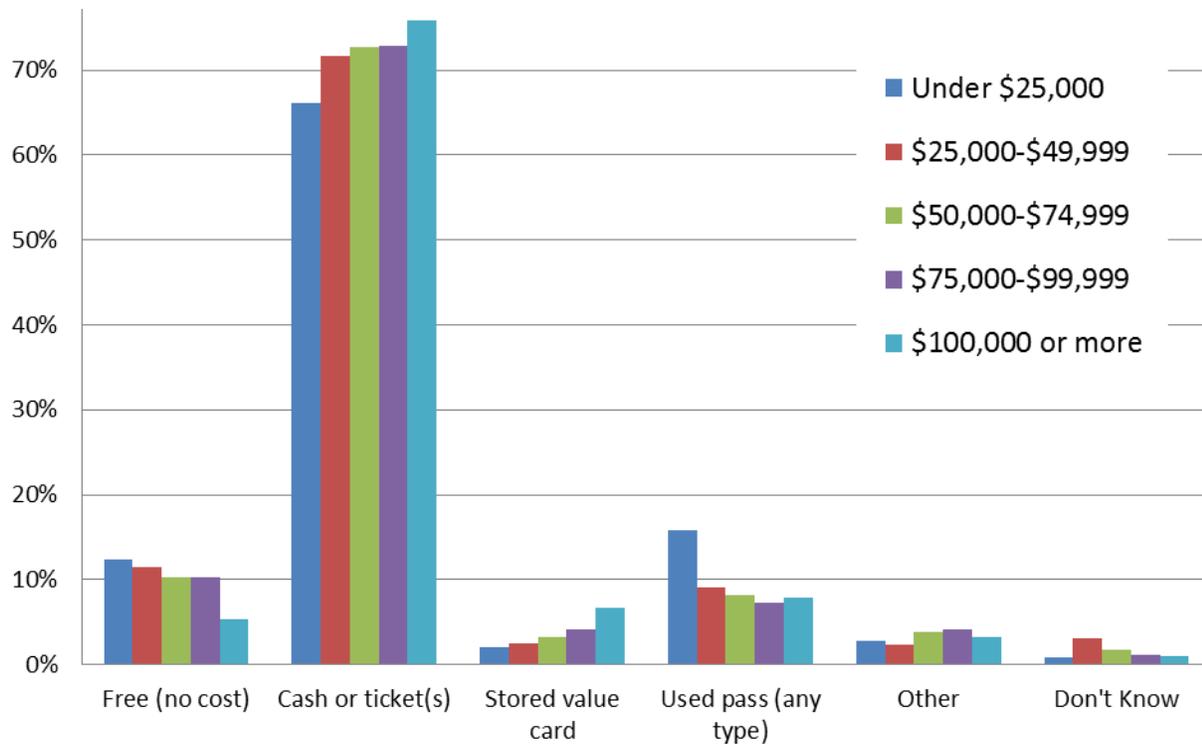


Figure 5: Stated Transit Payment Method by HH Income

It is obvious that cash or single ride tickets are the dominant form for all income categories. However, it is noteworthy that low-income households (those with income under \$25,000 for purposes here) have the lowest percentage of cash payments (66.14%) and the highest percentage of pass usage (15.86%) of any income group. At 2.04%, stored value cards are used the least by low-income households among the income groups. Based on the usage of pass media for fare payment, this suggests that smart card adoption by low-income households is a reasonable assumption and may in fact outpace higher income categories.

Of the persons reporting transit pass usage (140 of whom reside in low-income households), the breakdown by type of pass is shown in Figure 6. Low income households are among the highest users of the shorter duration passes, with 12.86% using 1-day passes, 2.86% using 5-day passes and 4.29% using 7-day passes. A significant proportion of low-income respondents also use monthly passes (41.43%), though this is near the lowest rate of usage among income categories.

This graphic suggests that low income households could strongly benefit from the smart card system – if a low income transit user is only able to afford shorter duration transit passes, but would benefit from the greater discounts associated with monthly passes, the smart card system would facilitate that. This data suggests that over 20% of low-income transit users could potentially benefit in this way (not including those users with “other” transit passes).

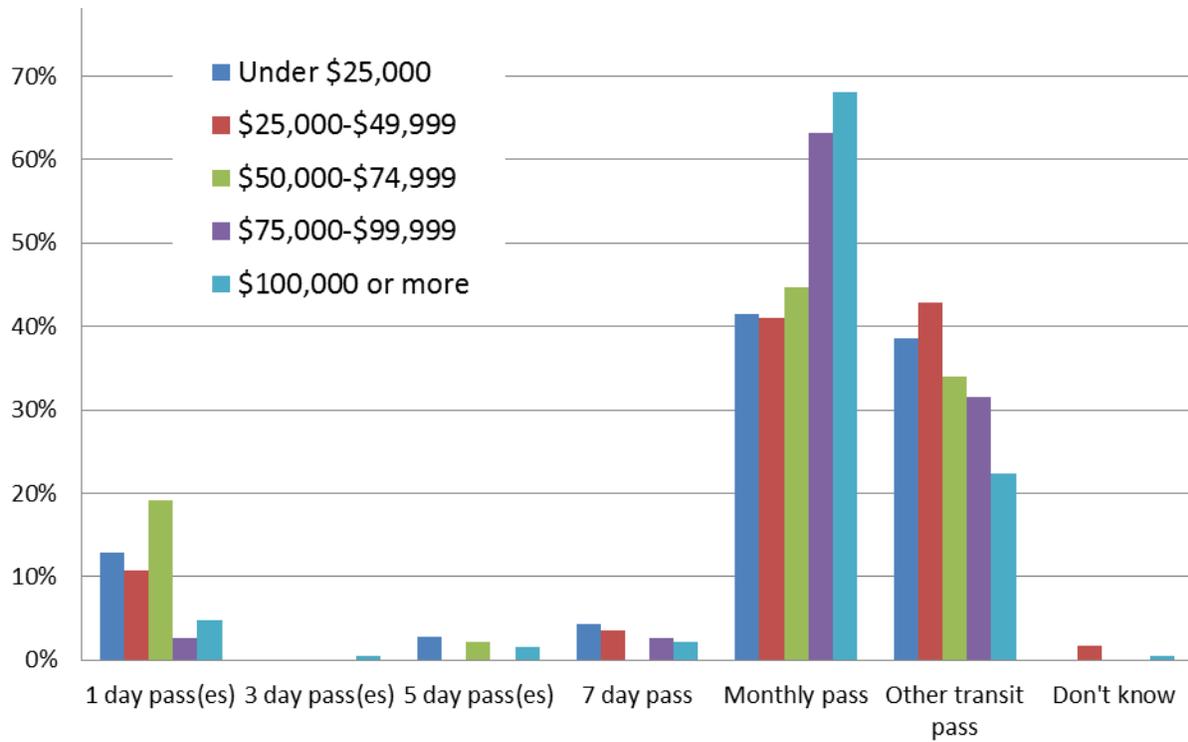


Figure 6: Stated pass usage by household income

As previously qualified, the above graphics are based on persons who report using transit, but did not necessarily do so on their assigned travel day. The following figure represents those trips made on assigned travel days during the CSTS.

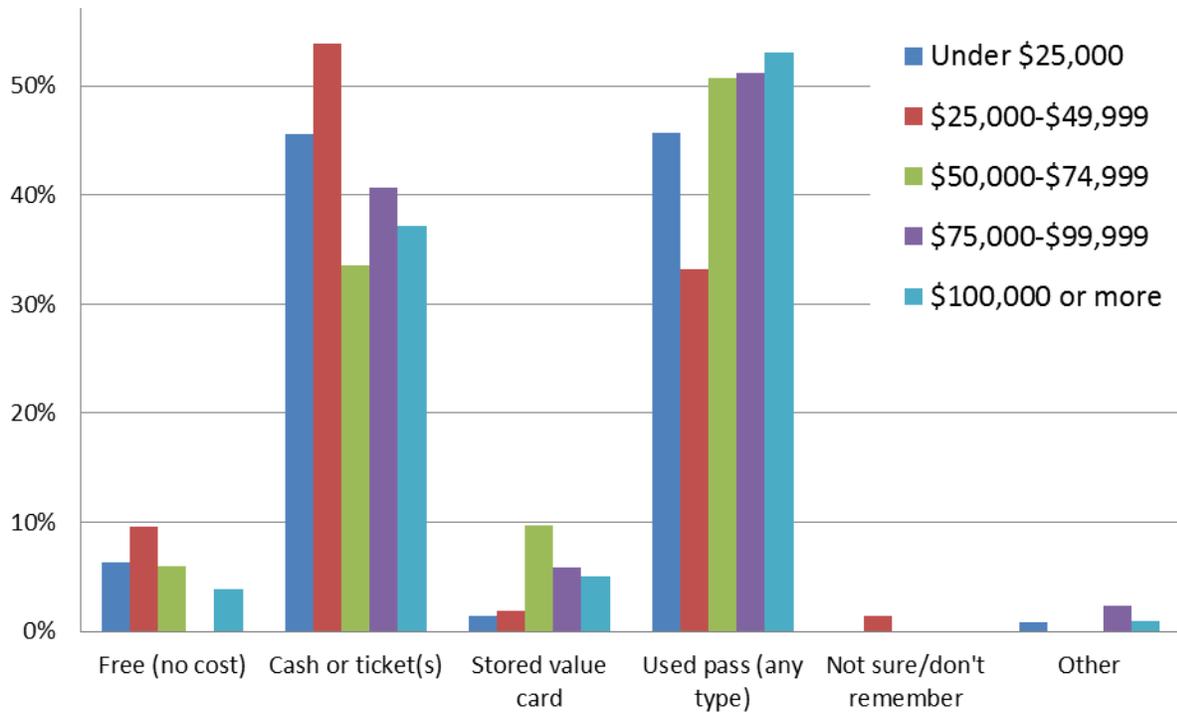


Figure 7: Revealed (based on trips made on assigned travel date) fare media usage by household income

Unsurprisingly, the number of “not sure/don’t remember” response went down significantly in the revealed data (actual trips reported on the travel date). Two important observations surface regarding low-income households: 1) The number of cash payments is lower in the revealed data (45.58%) than in the stated data (66.14%), and 2) The proportion of pass usage is much higher (45.76% vs. 15.86%). Both of these results suggest that pass usage among low income households is significant and that there is considerable room for benefit to low income populations currently paying cash fare by utilizing a smart card system.

Fare Increase Equity Analysis

Given that two of the services have zone-based fare structures (which is a function of distance), a straightforward and appropriate means of comparing the services is on a per-mile basis. The mileage between two stops is assumed the shortest path distance and does not account for any substantial deviations from this path by local bus routes.

Costs in these examples for the various services are based upon a single ride cash payment (at the station for rail service). It is assumed that these costs will accurately reflect any differentials in other pass categories, that is, that discounts for multi-day passes will be consistent across modes. Analysis of discounts is included later in this report.

Long distance analysis example

The only two services that provide long-distance analysis are rail and express bus, so these two will be used to compare the fare increases. The example routes are the 950 from downtown Hartford to New Haven and the NHL from New Haven to Stamford.

Route 950 – Hartford to New Haven

Distance: \approx 40 miles
Proposed Fare (5 zones): \$6.00
Proposed Increase: \$0.85
Proposed Fare (per mile): \$0.15/mi
Proposed Increase (per mile): \$0.02125

NHL –New Haven to Stamford

Distance: \approx 40 miles
Proposed Fare: \$8.00
Proposed Increase: \$0.50
Proposed Fare (per mile): \$0.20/mi
Proposed Increase (per mile): \$0.0125

Short Distance analysis example

Using the National Transit Database, the average trip length across the CTtransit bus system was estimated to be approximately 4 miles in 2014. This trip length is used in the analysis below to calculate fare increase impacts on a per-mile basis across all three modes.

Any local service (82-84 from Rockville PnR to Vernon PnR for comparison below)

Distance: \approx 4 miles
Proposed Fare: \$1.75
Proposed Increase: \$0.25
Proposed Fare (per mile): \$0.4375/mi
Proposed Increase (per mile): \$0.0625

Route 917 – Rockville PnR to Vernon PnR

Distance: \approx 4 miles
Proposed Fare: \$3.20

Proposed Increase: \$0.50

Proposed Fare (per mile): \$0.80/mi

Proposed Increase (per mile): \$0.125

It should be noted that the 82-84 local route is a cheaper alternative to the 917 from Rockville to Vernon (albeit at a much higher travel time: 41 min vs. 8 min).

NHL – Noroton Heights to Stamford

Distance: ≈ 4 miles

Proposed Fare: \$3.00

Proposed Increase: \$0.25

Proposed Fare (per mile): \$0.75/mi

Proposed Increase (per mile): \$0.0625

Based on these limited examples, it appears that on a per-mile basis the NHL is less impacted by the fare increase than trips on express routes of equivalent distance. And while on longer-distance trips the NHL fare is still higher, the increase is nearly double for express bus services on a per-mile basis. It appears that Impacts on a per-mile basis tend to be about twice as high for Express service than for local bus or rail service.

Using the methodology depicted above, a comprehensive graph of *the increase in service costs* across the state-owned public transportation system on a per-mile basis is shown below in Figures 8 and 9. The graphs show the current proposal of 6% increase in rail service and 16.67% in bus service.

As mentioned previously, the local bus service has a flat rate fare, regardless of distance. The costs for express bus and rail are calculated from the published schedule of fares based on the zone structure currently employed in each of the services. A cost and cost per mile was computed for all possible origin-destination pairs within the Express Bus and Rail services in Connecticut. Distances were computed using shortest path as calculated through the Google Maps API. For Express Bus services, origin-destination pairs that shared a town and a zone were not included in the analysis. This was done to remove very short trips from the Express Bus analysis that would be served more inexpensively by the local bus service. The resulting data set contains approximately 1900 origin-destination pairs in the combined Express Bus and Rail dataset. Because Local Bus has a fixed fare, a local bus cost per mile was calculated for each of the distances associated with the 1900 pairs. When presented in the figures below, local service is not included for long trips to improve the clarity of the figures. The data is available and can be provided on request.

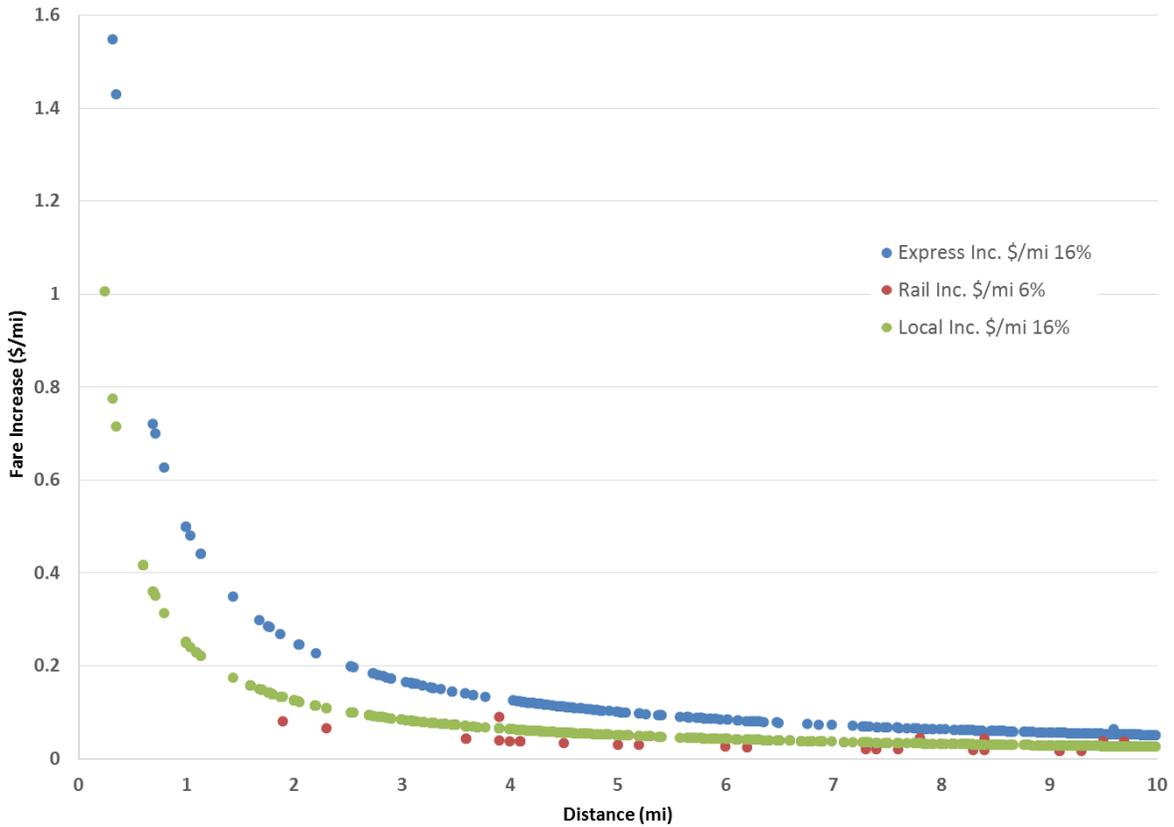


Figure 8: Fare Increase per mile by mode (6% Rail Increase, 16.67% Bus Increase)

Figure 8 displays the fare increase per mile by mode, truncated at 10 miles to provide some detail at the local trip length level. From this graphic, it is apparent that on a per-mile basis express bus services do indeed shoulder more of the burden of this fare increase structure. The blue dots show the increase per mile in fare for origin-destination pairs of a particular distance. As one would expect, the per-mile increase is smaller for longer trip across all modes. What is striking is that when measured this way, rail service is absorbing a smaller per-mile increase for short trips.

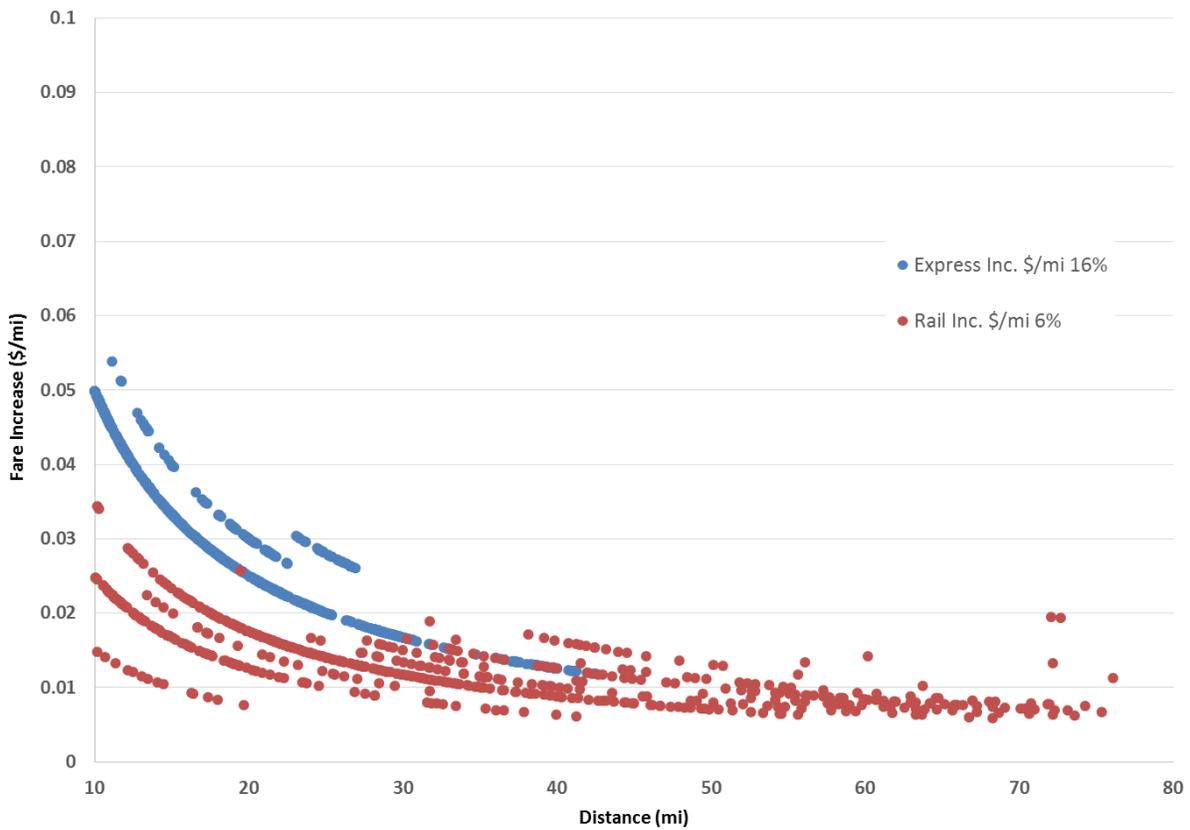


Figure 9: Fare Increase per mile by mode (6% Rail Increase, 16.67% Bus Increase): Longer Trips

Figure 9 restricts the view to longer trips, those between 10 and 80 miles. It also reformats the y-axis to a maximum of \$0.1/mile to highlight differences. Local service has also been eliminated from the graphic to highlight the most relevant comparisons for these longer origin-destination pairs. In the proposed fare scenario, express bus continues to shoulder more of the burden on a per-mile basis for nearly all trips up through 40 miles (which is the longest express bus trip).

Evaluation of Impacts: Household Income

The proposed changes to the fare structure have been evaluated in isolation – that is, the increase itself has been used as the guide to evaluate the impacts on various populations. However, the impacts will not be experienced by travelers on an incremental per-mile basis but in realized costs for individual trips and large number of trips made over the course of a year. According to the 2016 CSTS, the following are average trip lengths on the various transit modes:

Local bus: 7.1 miles

Express bus: 13.1 miles

Metro North: 40.7 miles

Shore Line East: 33.3 miles

These trip lengths will be used to compare the impacts on travelers in three ways – a single ride, weekly cost and yearly cost. Weekly and yearly costs are estimated based on a weekly pass cost and 12 months of using monthly passes for the annual cost, with data pulled from the services' websites.

Table 1 provides a breakdown of costs associated with the fare increase scenario.

Table 1: Cost Impacts of Proposed 16% Bus and 6% Rail fare increases

Service (average Trip)	Single Ride Cost Increase (\$)	Weekly Pass Increase (\$)	Annual Pass Increase (\$)	New Single Ride Cost (\$)	Total Weekly Pass (\$)	Total Annual Pass (\$)
Local Bus (7 miles)	\$0.25	\$2.75	\$108.00	\$1.75	\$19.25	\$756.00
Express Bus (13 miles): Route 901 from Consitution Plaza to Maple Glen/Dowd Ave.	\$0.60	N/A	\$244.80	\$4.10	\$45.10	\$1,672.80
Metro North/NHL (41 miles): New Haven to Stamford	\$0.50	\$4.00	\$114.00	\$8.00	\$68.00	\$1,968.00
MNR/NHL (35 miles): Stamford to GCT	\$0.90	\$9.00	\$228.00	\$15.40	\$154.00	\$3,984.00
SLE (33 miles): Old Saybrook to New Haven	\$0.45	\$3.75	\$103.20	\$7.20	\$64.50	\$1,807.20

The costs associated with Express bus, MNR, and SLE are based on representative trips that have a trip length approximately equal to the average trip. Stamford to GCT was included because it is a high-ridership trip with a different fare structure than intra-state travel.

The total annual cost increase is least for SLE and most for Express Bus. The intra-state rail systems both show the smallest annual pass increases, whereas the rail service to GCT from Stamford sees a substantially larger increase.

The 2016 CSTS was used to calculate the average income of riders on each of the service types, also making a distinction between MNR and SLE. Categorical income data were collected in the 2016 CSTS and in order to provide an average value it was assumed that responses were uniformly distributed within each category, allowing the midpoint income of that category to be used in the analysis. For the top income category of “Great than \$250,000”, a value of \$350,000 was used in these calculations. The average household incomes by service are as follows:

Local bus: \$30,452

Express Bus: \$70,452

MNR: \$174,048

SLE: \$143,076

These income estimates were used to prepare Tables 2 and 3, which depict the annual increase in service cost as a percentage of annual income (Table 2) and the total service cost as a percentage of household income (Table 3).

Table 2: Annual Service Cost Increases as a percentage of HH Income

Service (average Trip)	
Local Bus (7 miles)	0.35%
Express Bus (13 miles): Route 901 from Consitution Plaza to Maple Glen/Dowd Ave.	0.35%
Metro North/NHL (41 miles): New Haven to Stamford	0.07%
MNR/NHL (35 miles): Stamford to GCT	0.13%
SLE (33 miles): Old Saybrook to New Haven	0.07%

Table 3: Total New Annual Service Cost as a percentage of HH Income

Local Bus (7 miles)	2.13%
Express Bus (13 miles): Route 901 from Consitution Plaza to Maple Glen/Dowd Ave.	2.37%
Metro North/NHL (41 miles): New Haven to Stamford	1.13%
MNR/NHL (35 miles): Stamford to GCT	2.29%
SLE (33 miles): Old Saybrook to New Haven	1.26%

Table 2 suggests that regardless of the fare increase structure, the impact of the annual service increase is least for intra-state MNR travelers and SLE. This is due to the substantial difference in the average household income of MNR and SLE riders versus local and express bus. It also reflects the deeper discounts associated with the rail services as opposed to the proposed Express and Local bus weekly and monthly passes.

In Table 3, total annual costs are presented. MNR intra-state trips have the lowest cost as a percentage of Household income. For example, from New Haven to Stamford on MNR will result in a total annual cost of \$1,968, which as a percentage of an average household income of \$174,048 is approximately 1.13%.

The Express Bus service on the 901 has the highest annual cost as a percentage of household income. This is again due to the lower average household income associated with bus travelers and the smaller discounts for weekly and monthly passes in the proposed fare increase.

Weekly and Monthly Passes

There is a difference in the weekly and monthly pass discounts applied across the transit modes evaluated in this study. Figures 10-13 present the cost per mile of weekly and monthly passes across the modes. The same origin-destination pairs were utilized in this analysis, and a similar picture emerges.

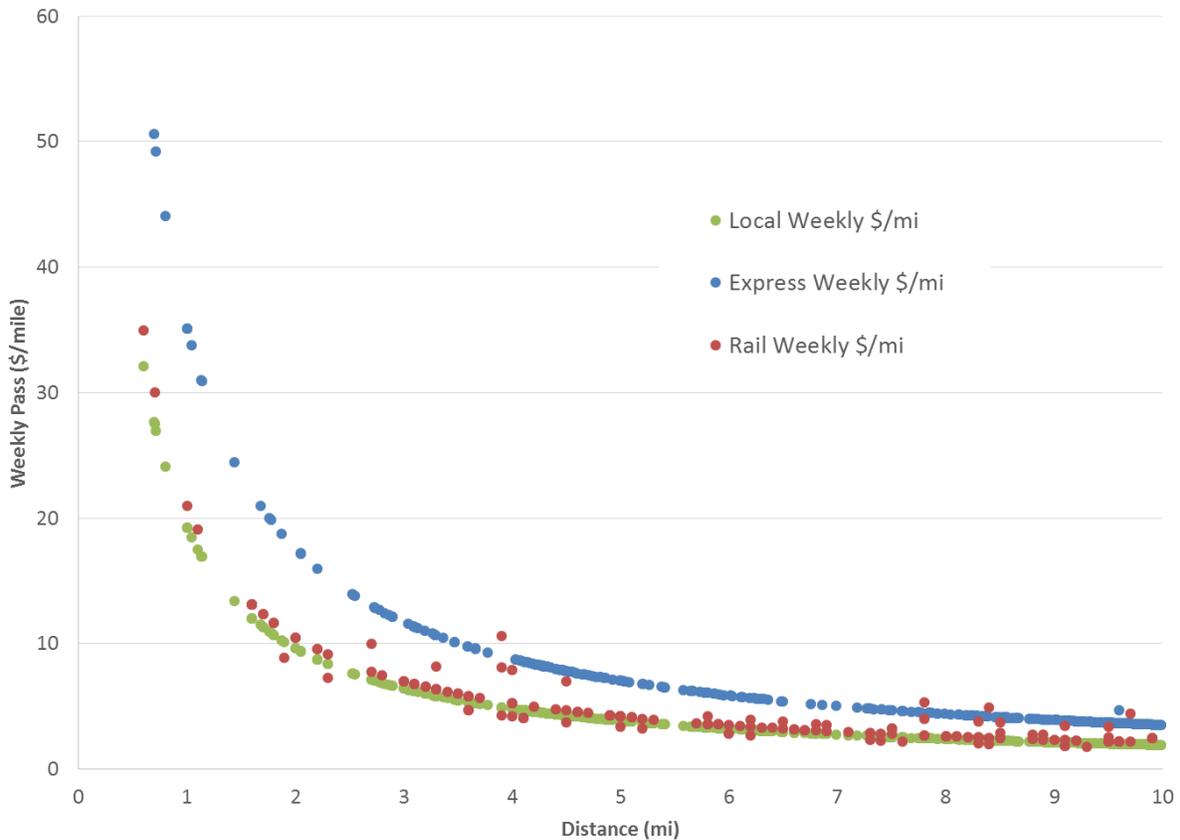


Figure 10: Weekly pass cost per mile by mode (6% Rail Increase, 16.67% Bus Increase): Shorter trips

Figures 10 and 11 depict weekly and monthly pass cost per mile by mode. Immediately apparent is that in agreement with the increased annual cost burden apparent in tables 2 and 3, this differential translates to the per-mile analysis as well. This suggests that a deeper discount associated with weekly and monthly passes could accomplish two mutually reinforcing goals:

- 1) Achieve greater vertical equity between rail and bus passengers
- 2) Promote Smart Card usage across the system, enabling more riders to leverage the associated discounts.

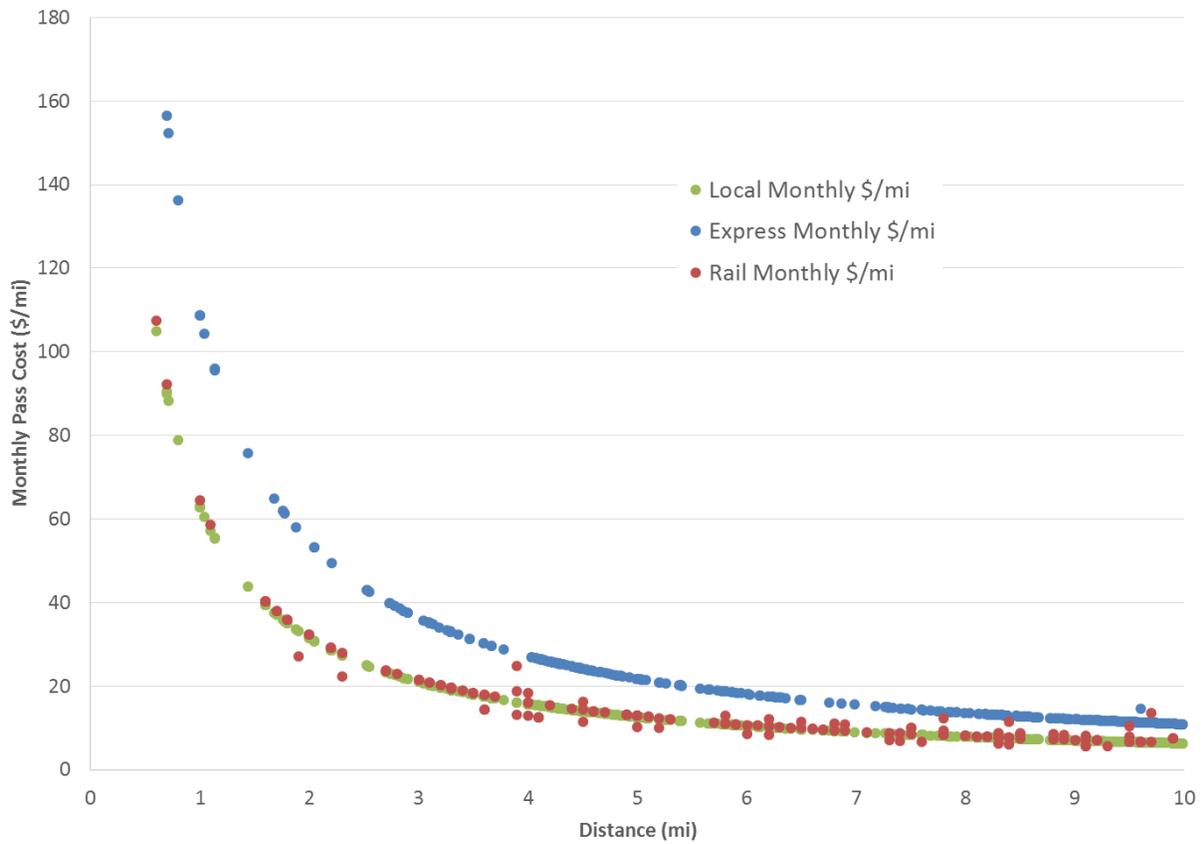


Figure 11: Monthly pass cost per mile by mode (6% Rail Increase, 16.67% Bus Increase): Shorter trips

Figures 12 and 13 present longer trips and the per-mile cost associated with weekly and monthly passes. The difference is not as stark in these examples, however, from a vertical equity perspective, the express bus costs should be lower than rail due to the income disparity described earlier in the report.

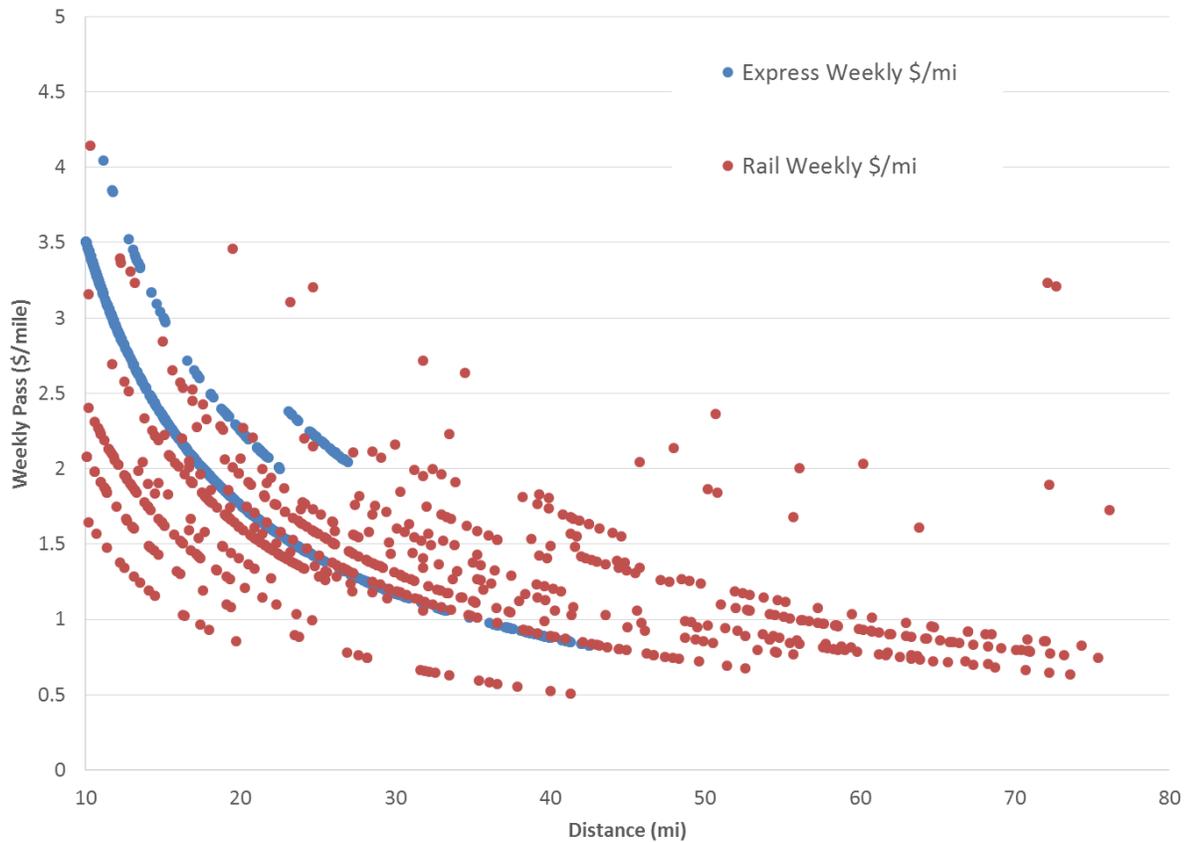


Figure 12: Weekly pass cost per mile by mode (6% Rail Increase, 16.67% Bus Increase): Longer trips

Findings

There are three key findings from this equity analysis of the proposed fare increase on CTDOT Public Transportation Services:

- 4) There is a significant difference in income distribution depending on the type of service being used by travelers in Connecticut. Rail passengers tend to have very high household incomes, whereas local bus users tend to have low household incomes. Express Bus users' income distribution is in-between Rail and Local Bus.
- 5) There is evidence to support the assumption that the proposed smart card system can benefit low-income riders and help to mitigate the impact of the proposed increases, especially if deeper discounts are built into the express and local bus weekly and monthly passes.
- 6) The proposed 16.67% increase to bus fares and 6% increase to Rail fares may disproportionately burden low-income households when the increases are viewed from a per-mile perspective. Deeper discounts associated with weekly and monthly passes may mitigate these effects and promote increased pass usage amongst lower-income riders.

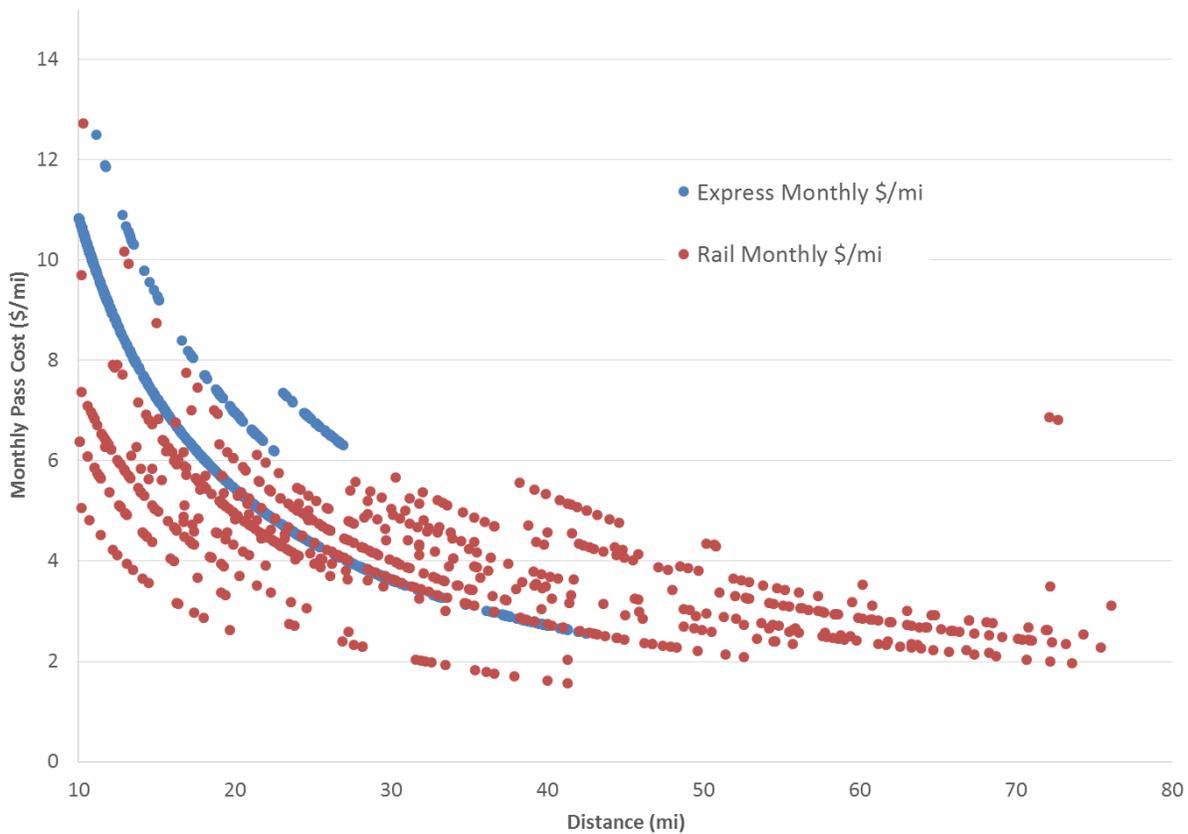


Figure 13: Monthly pass cost per mile by mode (6% Rail Increase, 16.67% Bus Increase): Longer trips

Recommended future study

In addition to adopting the planned smart card system, CTDOT is encouraged to adopt a vertical equity perspective that looks to achieve equality in the outputs of the fare increase. To this end, household income characteristics of the riders of the three different modes should be taken into consideration and the burden allocated across modes accordingly. This would appropriately reflect the ability of the passengers of these modes to absorb increased costs. To this end, several analyses may be appropriate:

- 4) Evaluation of alternative fare increase scenarios.
- 5) Evaluation of alternative fare structures, including a comprehensive fare structure across all modes.
- 6) Evaluation of weekly and monthly pass discount regimes.

Attachment B: Rail and Bus Budget Options

Rail Operations

The Department's Rail Operations Budget Plan addresses not only the recent \$1,013,142 legislative reduction, but also addresses the overall anticipated needs for funding in this account which have grown significantly. The estimated shortfall in this account is approximately \$11,500,000. The shortfall is primarily related to current estimated expenditure projections exceeding the Department's budget request submitted back in late 2014. The Department's proposal for the Rail account (see attached) includes a total reduction of approximately \$14.4 million, exceeding the amount needed by \$2.9 million.

The attached Rail Appropriation spreadsheet values the savings of a 5% fare increase at approximately \$7.1 million.

We are achieving the additional savings, as depicted in the attached Rail Appropriation spreadsheet, by reducing Metro North budgeted overtime costs associated with exterior railcar cleaning, station maintenance/cleaning, ticket window staffing, a reduction in advertising and the elimination of the Webticket program and the Mail & Ride fare discount. The Webticket and Mail & Ride changes are being made in conjunction with the upcoming implementation of a mobile ticketing initiative set to begin later this year.

Additionally, a reduction in budgeted fuel prices for Shore Line East in FY 2017 will yield a savings of approximately \$2.5 million. The Department is realizing a \$3.5 million credit related to its contractually mandated Inventory Deposit payment. (The Inventory Deposit is an annual calculation of the change in inventory level, a year in arrears, that results in either a payment of credit dependent on whether the inventory balanced increased and decreased during the preceding year.)

Lastly, Metro North has recently identified approximately \$4.2 million in savings related to their July Plan budget forecast. The July Plan is the Department's first look at what Metro North is projecting for their upcoming CY 2017 budget proposal. The savings are a combination of re-estimates of passenger revenue, labor and non-labor expense adjustments and new programmatic needs.

CT RAIL FY 2017 Proposed Budget Mitigations			
2	<u>FARE INCREASE AND SERVICE CUTS</u>		Comments
	New Haven Line Passenger Revenue	328,000,000	
	CT Share: 65%	213,200,000	
	Annual 5%	12,792,000	
	November 1st Implementation (less \$400K elasticity)	7,062,000	
	Shore Line East Passenger Revenue	2,500,000	
	Annual 5%	125,000	
	November 1st Implementation	72,917	
	TOTAL NEW FARES	7,134,917	
	Metro North Non-Service Cuts		
	- Reduce Advertising	20,000	July Implementation
	- Close Ticket Window-Greenwich	65,000	Sept. Implementation
	- Close Ticket Window-S. Norwalk/Bpt.	194,000	Sept. Implementation
	- Reduce Ticket Window by 1 -NH	65,000	Sept. Implementation
	- Reduce Car Cleaning OT	579,000	July Implementation
	- Reduce NHL Station Maintenance OT	37,000	July Implementation
	- Reduce NHL Station Cleaning OT	32,000	July Implementation
	- Reduce Ticket Window OT	60,000	July Implementation
	- Eliminate Webticket/Mail&Ride 2% Discount	175,000	Dec. Implementation
	Total Metro North Non-Service Cuts	1,227,000	
	Offsets		
	- Lower PRIA Traction Power Recovery	(1,950,000)	July Implementation
	- Increase ROW Cleanup	(500,000)	July Implementation
	- MTA Allocated Costs	(985,000)	
	- Reserve for Budgeted Non-Service Cuts	(600,000)	
	Total Offsets	(4,035,000)	
	Inventory Deposit Adjustment	3,500,000	
	July Plan Savings	4,130,000	
	Amtrak SLE Fuel Savings	2,500,000	
	TOTAL NEW FARE AND SERVICE CUTS	14,456,917	

Bus Operations

The Department's Bus Operations Budget Plan addresses not only the recent \$568,353 legislative reduction, but also addresses much of the overall anticipated needs for this funding in this account which have grown significantly. The estimated shortfall in this account is approximately \$5,000,000. The shortfall is primarily related to current estimated expenditure projections exceeding the Department's budget request submitted back in late 2014. The Department's proposal for the Bus account (see below) includes a total reduction of approximately \$3.6 million, leaving a shortfall of \$1,400,000 which will be made up through other accounts.

More specifically, the Department plans to affect an increase in bus fares of \$0.25, bringing the current single trip fare from \$1.50 to \$1.75 effective on or about December 1, 2016. The schedule below values the savings of this fare increase at approximately \$2.6 million.

Additionally, the Department will be adjusting its subsidies to Transit Districts by \$1 million, which will require the Transit Districts, at their discretion, to utilize alternative funding, or to either raise fares or cut services.

BUS TRANSIT FY 2017 Proposed Budget Mitigations			
<u>FARE INCREASES and TRANSIT DISTRICTS REDUCTIONS</u>			
Passenger Revenues			\$29,677,328
.25 increase (from \$1.50 to \$1.75) representing a 16.67% inc.			\$4,947,211
Revenue with .2 elasticity			<u>\$3,957,768</u>
November 1st Implementation			\$2,638,512
TOTAL NEW FARES			\$2,638,512
Transit District Funding Reductions (achieved through alternate funding sources, fare increases, or service cuts)			\$1,000,000
TOTAL:			\$3,638,512

Rail & Bus Fare Increase Information

Rail & Bus Fare Increase History						
Rail						
	Effective	%				
	Date	Increase				
	1991	1.86%				
	1992	4.35%				
	1993	4.17%				
	1994	5.01%				
	Jan-96	5.00%				
	Jan-97	5.00%				
	Jan-98	5.00%				
	Jul-03	15.00%	Fair			
	Jan-05	5.50%	Increase	M-8		
	Jan-12	5.25%	4.00%	1.25%	Per Sec 13b-78m	
	Jan-13	5.00%	4.00%	1.00%		
	Jan-14	5.00%	4.00%	1.00%		
	Jan-15	1.00%	0.00%	1.00%		4% - Proposed Reduction FY 2015 Midterm
	Jan-16	1.00%	0.00%	1.00%		
	Jan-17	1.00%	0.00%	1.00%		
	Jan-18	1.00%	0.00%	1.00%		
Bus						
	Effective	Previous	New	%		
	Date			Increase		
	Aug-83	\$ 0.60	\$ 0.75	25.00%		
	Sep-92	\$ 0.75	\$ 0.85	13.33%		
	Apr-94	\$ 0.85	\$ 0.95	11.76%		
	Oct-95	\$ 0.95	\$ 1.00	5.26%		
	Jan-04	\$ 1.00	\$ 1.10	10.00%		
	Jan-05	\$ 1.10	\$ 1.25	13.64%		
	Jan-12	\$ 1.25	\$ 1.30	4.00%		
	Jan-14	\$ 1.30	\$ 1.50	15.38%		

ADA Para-transit Program – SID 12378

The Department's ADA Para-transit Account was not subject to any recent budgetary reductions. Since we have limited control over the expenditures in this mandated account we cannot offer a plan to reduce expenditures in this account. The FY 2016 estimated expenditures are anticipated to be approximately \$36.2 million. Historically expenditures have increased at a rate of 4%, or more. Although it is possible that optional service cuts in the Bus Appropriation might reduce the anticipated expenditures in this account, it is prudent to anticipate a 4% increase over the FY 2016 expenditures. As a result we are anticipating a budgetary shortfall in this account of \$636,000 which will need to be mitigated using other appropriated funding.

Attachment C – Bus Fare Structure

http://www.ct.gov/dot/lib/dot/CTtransit_CTfastrak_Proposed_Fares_Effective_on_or_after_December_1_2016_FINAL_08182016.pdf

Attachment D – New Haven Line Fare Structure

http://www.ct.gov/dot/lib/dot/NH_Line_Grand_Central_Terminal_Proposed_Fares_Effective_December_1_2016_FINAL_08172016.pdf

http://www.ct.gov/dot/lib/dot/NH_Line_Intermediate_Proposed_Fares_Effective_December_1_2016_FINAL_08172016.pdf

Attachment E – Shore Line East Fare Structure

http://www.ct.gov/dot/lib/dot/SLE_and_UniRail_DECEMBER_2016_FINAL_08172016.pdf