

MAY 2019

# Fare Change Equity Analysis



Detroit Department of Transportation

Proposed Fare Change

November 15, 2018

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## 1.0 INTRODUCTION

The Detroit Department of Transportation (DDOT) conducted a Fare Equity Analysis to evaluate a proposal to implement fare increases for fixed-route bus service, decrease reduced fare for Medicare recipients and students, eliminate transfers, change period passes to rolling passes, and introduce a 4-Hour ticket, 24-Hour pass and mobile fare payment option.

The Fare Equity Analysis will assess the proposed fare to identify if it will have a disparate impact on our minority and low-income populations and if our low-income population will bear a disproportionate burden. If impacts are identified, mitigation strategies will be considered in an effort to avoid and minimize negative impacts. In an effort to engage affected Title VI rider populations, a public outreach effort was implemented.

## 2.0 TITLE VI REGULATORY REQUIREMENTS

The Fare Equity Analysis is conducted in compliance with the Federal Transit Administration (FTA) Circular 4702.1B, which requires that under the Title VI of the Civil Rights Act of 1964, transit agencies receiving federal funding evaluate significant system-wide service and fare changes and proposed improvements at the planning stages and programming stages to determine whether those changes have a discriminatory impact on minority and low-income populations.

Title VI is a section of the Civil Rights Act of 1964 requiring that “No person in the United States shall on the grounds of race, color or national origin, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving federal financial assistance.” The principles of Title VI are already used by DDOT to ensure that appropriate consideration is given to all stakeholders when major operations decisions are made. DDOT fully supports the objectives of Title VI, which seek to:

- Ensure the level and quality of transit service is provided in a nondiscriminatory manner;
- Promote full and fair participation in decision-making without regard to race, color, or national origin.

## 3.0 DEFINITIONS

Minority Population – means any readily identifiable group of minority persons who live in geographic proximity and, if circumstances warrant, geographically dispersed/transient populations (such as migrant workers or Native Americans) who will be similarly affected by a proposed Department of Transportation (DOT) program, policy, or activity.

Low-Income population – refers to any readily identifiable group of low-income persons who live in geographic proximity, and, if circumstances warrant, geographically dispersed/transient persons (such as

migrant workers or Native Americans) who will be similarly affected by a proposed FTA program, policy or activity.

Disparate Impact – refers to a facially neutral policy or practice that disproportionately affects members of a group identified by race, color, or national origin, where the recipient's policy or practice lacks a substantial legitimate justification and where there exists one or more alternatives that would serve that same legitimate objectives but with less disproportionate effect on the basis of race, color, or national origin.

Disproportionate Burden – refers to a neutral policy or practice that disproportionately affects low-income populations more than non-low-income populations. A finding of disproportionate burden requires the recipient to evaluate alternatives and mitigate burdens where practicable.

## **4.0 PROJECT OVERVIEW**

DDOT is proposing a simplification of our current fare structure, along with an increase to the standard fare, which will go into effect May 1, 2019. The proposed fare changes aim to provide simpler choices, more flexibility for bus riders, and make riding transit easier in Detroit and across the region. The main goal of the fare simplification is to simplify the fare structure. The proposed fare structure will reduce our current number of fares and passes down to six tickets/passes. The tickets and passes will be available at either a standard or a reduced fare.

## **5.0 DDOT FARE CHANGE PROPOSAL FOR MAY 2019**

Table 1 cites the current and proposed fare structure for each fare category, along with the percentage change from the current to the proposed fare. DDOT proposes to discontinue 21 tickets and/or passes and increase the regular cash base fare to \$2.00, which would be a 33% increase of \$0.50. The Medicare recipient cash base fare and student cash base fare will decrease from \$0.75 to \$0.50, which is a 33% decrease of \$0.25, for each. With each increase of fare there are additional benefits built in, a reduction in fare to Medicare recipients and students, elimination of transfers, changing period passes to rolling passes, and introducing a 4-Hour ticket, 24-Hour pass and a mobile fare payment option, which will be discussed below.

Table 1

Fare Type	Current	Proposed	Change	% Change
<b>Cash Fares</b>				
Regular Cash Base Fare	\$1.50	\$2.00	\$0.50	33%
Regular Transfer	\$0.25	Discontinued	-	-
Regular SMART Top-Up Fare	\$0.50	Discontinued	-	-
Regular Agency Single-Ride Ticket	\$1.50	Discontinued	-	-
Regular Agency Transfer Ticket	\$0.25	Discontinued	-	-
Senior/Disabled Cash Base Fare	\$0.50	\$.50	\$0.00	0%
Senior/Disabled Transfer	\$0.10	Discontinued	-	-
Medicare Cash Base Fare	\$0.75	\$0.50	-\$0.25	-33%
Medicare Transfer	\$0.10	Discontinued	-	-
Student Cash Base Fare	\$0.75	\$0.50	-\$0.25	-33%
Student Agency Single-Ride Ticket	\$0.75	Discontinued	-	-
Student Transfer	\$0.25	Discontinued	-	-
<b>Passes</b>				
\$10 Value Card	\$10.00	Discontinued	-	-
Agency 2-Ride & 2-Transfer Ticket	\$3.50	Discontinued	-	-
Regular Weekly DDOT Pass	\$14.40	\$17.00	\$2.60	18%
Regular Five-Day DDOT Pass	\$14.00	Discontinued	-	-
Student ID Card	\$2.00	Discontinued	-	-
Monthly Regional Pass	\$49.50	\$70.00	\$20.50	41%
Regional Plus Pass (SMART only)	\$20.00	Discontinued	-	-
Regular Monthly DDOT Pass	\$47.00	\$50.00	\$3.00	6%
Regular Bi-Weekly DDOT Pass	\$27.50	Discontinued	-	-
Senior Monthly DDOT Pass	\$17.00	\$17.00	\$0.00	0%
Disabled Monthly DDOT Pass	\$17.00	\$17.00	\$0.00	0%
Student Semester Pass	\$136.50	Discontinued	-	-

#### **“4-Hour Ticket and 24-Hour Pass”**

The proposed new fare structure would simplify the fare by offering six new payment tickets and passes. DDOT is proposing two new options, a 4-Hour ticket and 24-Hour pass. Table 2 cites the proposed new fares, and their prices:

Table 2

Proposed New Fare	Standard Price	Reduced Price
4-Hour Ticket	\$2.00	\$0.50
24-Hour Pass	\$5.00	\$2.00
7 Day DDOT Only Pass	\$17.00	\$8.00
7 Day Regional Pass	\$22.00	\$10.00
31 Day DDOT Only Pass	\$50.00	\$17.00
31 Day Regional Pass	\$70.00	\$29.00

The proposed fare structure includes an increase of the base fares. However, there are some additional benefits built in which are: a reduction in fares for Medicare recipients and students, elimination of transfers, changing period passes to rolling passes, and introducing a 4-Hour ticket and 24-Hour and mobile payment option.

#### **Fare Reduction for Medicare and Students**

Medicare recipients and students will receive a decrease in fare from \$0.75 to \$0.50. This will be a cost benefit for our seniors ages 62 and over, our disabled community, and youth attending school up to high school (ages 18 and under).

#### **Elimination of Transfers**

The proposed change from a single ride base fare to a 4 Hour Unlimited Ride ticket will eliminate the transfer fare between DDOT buses. The 4 hour unlimited ride ticket will also eliminate the transfer cost of \$0.50 (Regular SMART Top-Up Fare) to a Suburban Mobility Authority Regional Transit (SMART) bus. Eliminating the transfer fare while providing rolling regional passes will make traveling around Detroit and the surrounding regions more convenient and efficient.

#### **Rolling Passes**

The proposed change from the period passes to rolling passes allows riders to purchase passes when it is most convenient to them. The value will remain the same regardless of when they are purchased. The passes will be activated at first use and will be valid for either the 24 hour, 7 day, 31 day time periods.

#### **Mobile Fare Payment Option**

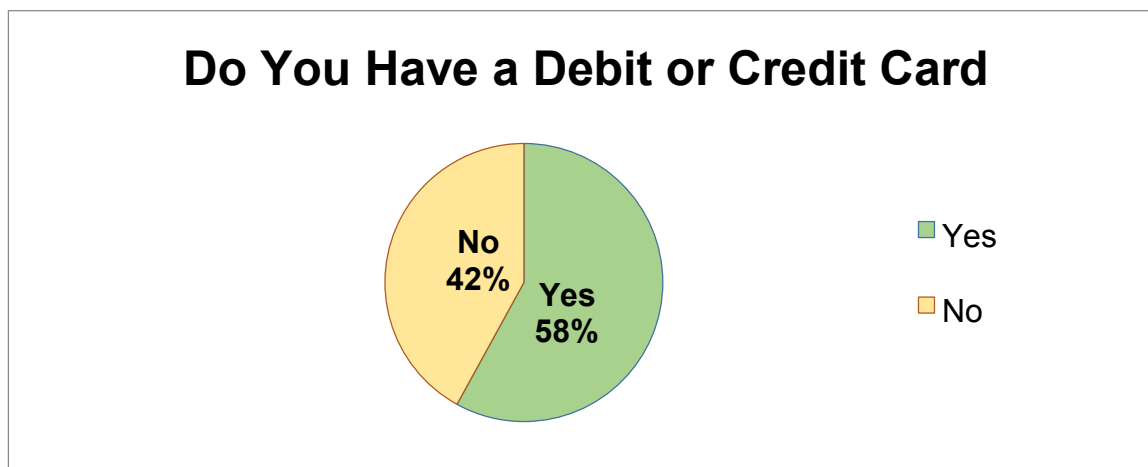
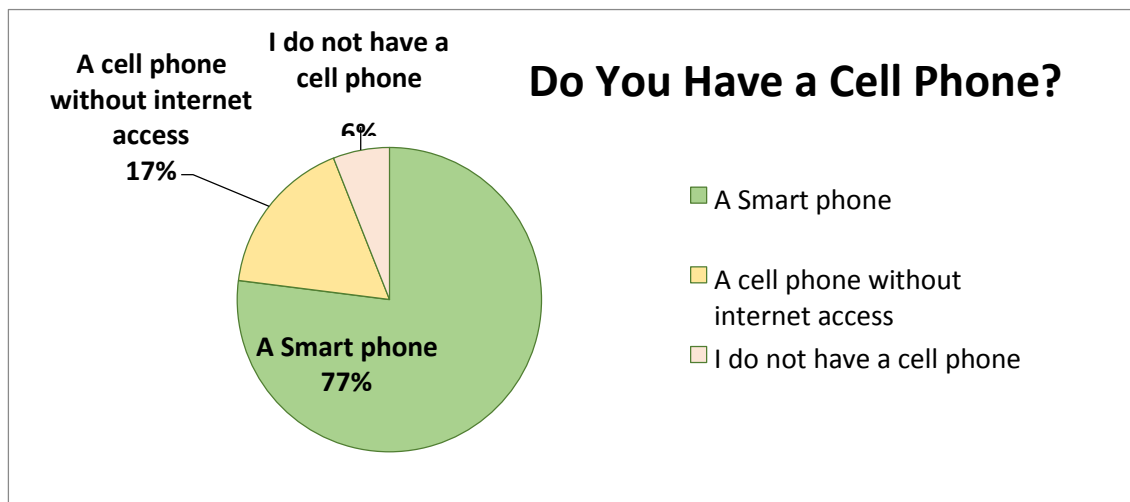
Mobile ticketing is an application that is connected to the user's bank account, credit card, or debit card. Upon purchase of a fare, the application will charge the user's account for the amount of the pass. Fares will not be activated until the rider selects "Use Ticket" on the application which will allow riders to purchase multiple passes at a time and use them when needed. The introduction of the mobile fare payment options should increase the convenience of riding DDOT and may encourage others to use DDOT more frequently.

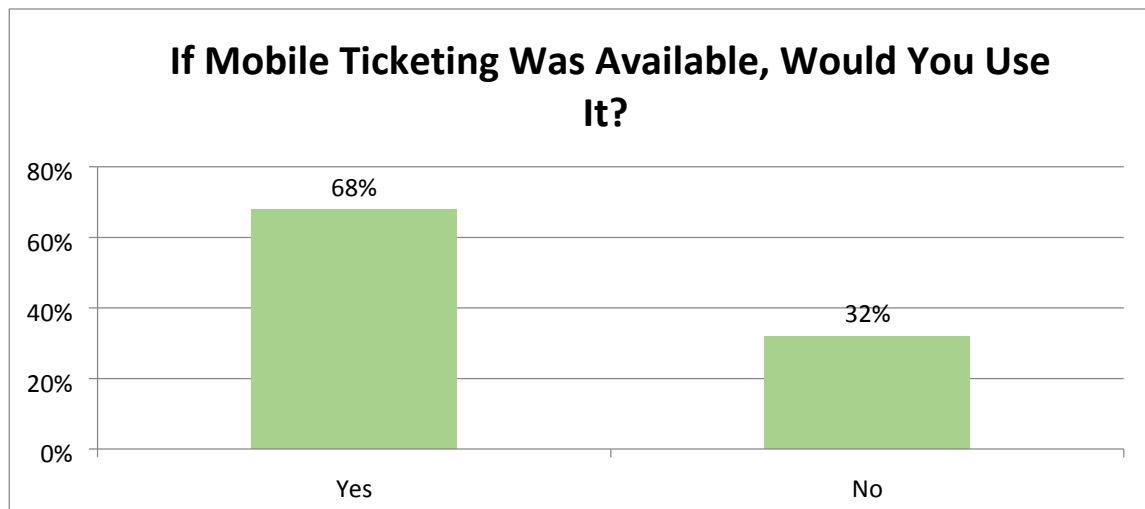
Riders will simply purchase their fare using the application and show the bus operator the moving animation on the screen to verify the validity of the ticket. As long as the animation is in motion, the ticket is valid and

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the driver will let the rider on. Many riders are increasingly moving toward not carrying cash. DDOT is proposing a mobile fare payment option to allow for greater convenience for pass purchases and increase the safety of our riders.

As part of the *DDOT 2018 On-Board Rider Survey*, riders were asked about items related to mobile fare payment, including if they have access to a debit or credit card, if they have a smartphone, and if they would be interested in using a mobile fare payment application. The survey indicated that 58% of respondents said they use a debit or credit card. The survey also revealed that 77% said they have a smartphone and 68% said they would use a mobile ticketing application. Based on these responses, it is likely that about 60% of DDOT riders would use the mobile fare payment application if it was convenient for them. The graphs below show the breakdown of responses.





## 6.0 METHODOLOGY

The main steps in completing this Fare Equity Analysis include:

- Determining the number and percent of users of each fare type being changed
- Reviewing fares before and after the change
- Comparing the difference in usage of each fare between minority, low-income, and overall riders
- Assessing the proposed fare change and non-fare change impacts on minority and low-income riders
- With regard to the fare changes, using DDOT's minority disparate impact and low-income disproportionate burden policies
- Engaging the public in assessing the potential disparate impacts and/or disproportionate burdens and developing mitigation measures
- Modifying the proposal if disparate impacts and/or disproportionate burdens are identified in order to avoid, minimize, or mitigate them and reanalyzing the proposed changes to determine whether the modifications remove potential impacts and/or burdens
- Providing justification for the proposed change showing that there are not alternatives that would have a less disparate impact or disproportionate burden

DDOT conducted an on-board rider survey from July 18<sup>th</sup> to August 3<sup>rd</sup>, 2018 and 1,602 surveys were collected. The on-board survey was collected in order to assess ridership characteristics. Data was collected on a riders trip, gender, age, race, income, number of people per household, languages spoken at home other than English, ridership frequency, method of fare payment, type of payment media used, method of Internet access, and mobile ticketing. The surveys were distributed among all routes based on the percentage of total ridership for each route. For example, Route 4 – Woodward carries 11% of the total weekday ridership, 11% of the surveys were collected on Woodward. This survey is included in Appendix A.



A Fare Revenue Survey was also conducted on June 2018 and 1,186 surveys were collected. The fare revenue survey was collected to assess our rider's current fare payment type and likely method of fare payment with new payment structure. This survey is included in Appendix B.

## 7.0 DEMOGRAPHICS, RIDERSHIP, AND FARE PROFILE

The US Census 2017 Quick Facts estimated dataset was used along with the *DDOT 2018 On-Board Ridership Survey*, which can be found in Appendix A. In order to identify Title VI populations, demographic data from DDOT's service area. With regard to the on-board survey, some respondents chose not to answer every question, which was permitted. Consequently, some columns in the data tables containing survey data do not sum to 100 percent.

Table 3

U.S. Census 2017 Quick Stats	Detroit	Michigan
Population, 2010, (v2017) estimate	673,104	9,962,311
Population, 2010 (April 1) estimates base	713,854	9,884,129
Population, percent change - April 1, 2010 - July 1, 2017	-5.7%	0.8%
Population, 2010 (April 1) estimates base	713,777	9,883,640
Persons under 5 years, percent, 2017	7.2%	5.8%
Persons under 18 years, percent, 2017	25.2%	21.8%
Persons 65 years and over, percent, 2017	12.6%	16.7%
Female persons, percent, 2017	52.7%	50.8%
White alone, percent, 2014 (a)	13.6%	79.4%
Black or African American alone, percent, 2014 (a)	79.7%	14.1%
American Indian and Alaska Native alone, percent, 2014 (a)	0.4%	0.7%
Asian alone, percent, 2017	1.4%	3.2%
Native Hawaiian and Other Pacific Islander alone, percent, 2017 (a)	0.0%	0.0%
Two or More Races, percent, 2017	2.0%	2.4%
Hispanic or Latino, percent, 2017	7.5%	5.1%
White alone, not Hispanic or Latino, percent 2012-2016	9.5%	75.2%
Household, 2012-2016	256,985	3,860,394
Persons per household, 2012-2016	2.61	2.51
Per capita money income in past 12 months (2012-2016)	15,562	\$27,549
Median household income, 2012-2016	\$26,249	\$50,803
Person below poverty level, percent,	39.4%	14.2%

### Race/Ethnicity

Race and ethnicity data obtained from the *DDOT 2018 On-Board Ridership Survey* is presented in the following table. African Americans represent 85% of DDOT's ridership compared to the 8% of White/Caucasians.

Table 4

DDOT Ridership Race/Ethnicity	Percentage
African American	85%
White/Caucasian	8%
Hispanic or Latino	3%
American Indian/Alaska Native	0%
Native Hawaiian and Pacific Islander	0%
Asian	1%
Other	1%
<b>Total Minority</b>	<b>100%</b>

### Household Income

Household income data obtained from the DDOT On-Board Ridership Survey is presented in the following table.

Table 5

Ridership Household Income							
	Less than \$10,000	\$10,000 - \$14,999	\$15,000 - \$24,999	\$25,000 - \$34,999	\$35,000 - \$49,999	\$50,000 - \$74,999	\$75,000 - \$100,000
DDOT Ridership	34%	24%	19%	12%	7%	3%	2%

### Fare Usage

The ridership data provided by the DDOT on-Board Ridership Survey indicates that the most used fare types are "Cash Based Fare" and the Cash Fare plus Transfer at 7%.

### Fare Type and Payment by Race/Ethnicity

The DDOT On-Board Ridership Survey provides the percentage of riders by race for each fare type as summarized in the following table.

Table 6

Fare Type and Payment by Race/Ethnicity							
	Black or African American	White/Caucasian	Hispanic/Latino	Asian	Native Hawaiian or Pacific Islander	Native American or Alaska Native	Other
Cash Base Fare	87%	9%	3%	1%	1%	1%	1%
Cash Fare + XFer	86%	8%	2%	2%	1%	2%	3%
SMART Top Up	74%	11%	4%	4%	4%	4%	0%
Single Ride Ticket	78%	8%	6%	2%	0%	2%	4%
Senior Cash Fare	83%	15%	0%	2%	0%	0%	0%
Senior Transfer	88%	12%	0%	0%	0%	0%	0%
\$10 Value Card	73%	27%	0%	0%	0%	0%	0%
Transfer Ticket	83%	10%	10%	0%	0%	0%	0%
Disabled Cash Fare	100%	0%	0%	0%	0%	0%	0%
Disabled Transfer	80%	20%	0%	0%	0%	0%	0%
DDOT Monthly Pass	85%	8%	2%	2%	2%	4%	4%
Student Single Ride Ticket	85%	0%	8%	0%	0%	15%	8%
Medicare Cash Fare	86%	7%	7%	0%	0%	0%	0%
Medicare Transfer	88%	13%	0%	0%	0%	0%	0%
DDOT 7 Day Pass	71%	14%	7%	21%	0%	0%	0%
2 Ride, 2 Transfer Ticket	87%	11%	3%	0%	0%	0%	0%
Student Cash Fare	85%	15%	0%	0%	0%	0%	0%
Student Transfer	71%	29%	0%	0%	0%	0%	0%
Student ID Card	88%	8%	4%	0%	0%	0%	0%
Student Semester Pass	100%	0%	0%	0%	0%	0%	0%
Weekly Card	88%	0%	12%	0%	0%	0%	0%
DDOT 5 Day Pass	100%	0%	0%	0%	0%	0%	0%
DDOT Bi-Weekly	94%	6%	6%	0%	3%	0%	0%
Monthly Regional Pass	83%	11%	2%	2%	2%	4%	0%
Monthly Disabled Pass	100%	0%	0%	0%	0%	0%	0%
Monthly Senior Pass	88%	3%	9%	0%	0%	0%	0%
Monthly Regional Plus Pass	80%	12%	8%	0%	0%	0%	0%

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### Fare Type and Payment by Household Income

The percentage of DDOT riders by household income and fare type is provided in the following table from the *DDOT 2018 On-Board Ridership Survey*.

Low income entries were coded based on federal poverty thresholds using annual income and household size. The DDOT On-Board Ridership Survey finds that the fare type with the largest share of low-income riders use single ride ticket at 91%, followed by the cash base fare at 89%. This data showing most-used fare types for low-income riders is consistent with the most-used fare type data for minority riders.

Table 7

Fare Type and Payment by Household Income								
	Under \$10,000	\$10,000- \$14,999	\$15,000- \$24,999	\$25,000- \$34,999	\$35,000- \$44,999	\$50,000- \$74,999	\$75,000- \$99,999	Over \$100,000
Cash Base Fare	36%	25%	16%	12%	6%	3%	1%	1%
Cash Fare + XFer	32%	25%	14%	11%	15%	1%	1%	0%
SMART Top Up	9%	26%	35%	9%	9%	4%	9%	0%
Single Ride Ticket	39%	24%	17%	11%	2%	4%	0%	2%
Senior Cash Fare	9%	21%	37%	21%	9%	2%	0%	0%
Senior Transfer	18%	12%	47%	6%	6%	6%	6%	0%
\$10 Value Card	33%	20%	20%	13%	13%	0%	0%	0%
Transfer Ticket	33%	13%	20%	23%	13%	0%	0%	0%
Disabled Cash Fare	47%	33%	13%	7%	0%	0%	0%	0%
Disabled Transfer	75%	0%	25%	0%	0%	0%	0%	0%
DDOT Monthly Pass	24%	29%	24%	8%	8%	4%	2%	0%
Student Single Ride Ticket	55%	18%	0%	27%	0%	0%	0%	0%
Medicare Cash Fare	45%	9%	9%	27%	9%	0%	0%	0%
Medicare Transfer	43%	0%	43%	14%	0%	0%	0%	0%
DDOT 7 Day Pass	31%	23%	15%	8%	15%	8%	0%	0%
2 Ride, 2 Transfer Ticket	59%	13%	18%	8%	0%	3%	0%	0%
Student Cash Fare	31%	0%	0%	46%	8%	8%	8%	0%
Student Transfer	33%	17%	33%	0%	17%	0%	0%	0%
Student ID Card	48%	14%	19%	10%	5%	5%	0%	0%
Student Semester Pass	100%	0%	0%	0%	0%	0%	0%	0%
Weekly Card	17%	39%	22%	4%	4%	9%	0%	4%
DDOT 5 Day Pass	22%	44%	22%	11%	0%	0%	0%	0%
DDOT Bi-Weekly	15%	29%	32%	12%	9%	3%	0%	0%
Monthly Regional Pass	34%	29%	20%	12%	2%	2%	0%	0%
Monthly Disabled Pass	43%	43%	0%	0%	7%	7%	0%	0%
Monthly Senior Pass	19%	29%	39%	6%	0%	6%	0%	0%
Monthly Regional Plus Pass	21%	21%	25%	21%	0%	4%	4%	4%

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## 8.0 COMMUNITY ENGAGEMENT

In the early planning stages, DDOT held two focus groups which included select DDOT riders and bus operators, along with community transit activists. This was done in order to gauge the initial opinions of internal and external stakeholders on pricing and pass options. Based on the focus groups feedback, DDOT reduced the proposed 31-day pass from \$60.00 to \$50.00. This is a \$3.00 increase instead of a \$13.00 increase. DDOT also added a 7-Day Regional Pass based on the focus group suggestions.

DDOT held eight fare change community meetings in each of the seven city districts and one at DDOT's headquarters. A press conference was held by Mayor Mike Duggan who provided support for the proposed fare changes. Fare revenue and community meeting surveys were conducted to gather input from our community. The purpose of these events was to inform the public of the potential fare changes, gather input on the fare proposal, and collect data about existing and future fare usage. The community input meetings dates and locations are listed below:

- Monday, August 27: Redford Library, 6 – 7 PM
- Tuesday, August 28: Mike's Market, 11 AM – 12 PM
- Wednesday, August 29: Northwest Activities Center, 10 AM – 12 PM
- Thursday, August 30: East Lake Baptist Church, 10 AM – 12 PM
- Thursday, August 30: Samaritan Center, 5:30 – 7 PM
- Wednesday, September 5: Campbell Library, 10 AM – 12 PM
- Wednesday, September 5: Main Library, 5:30 – 7 PM
- Thursday, September 6: DDOT Admin Building, 11 AM – 12:30 PM
- Thursday, September 6: Metropolitan Church of God, 5:30 – 7 PM

DDOT has also been working with local groups within the City of Detroit that have a stake in public transportation to obtain their input regarding the proposed fare changes. In addition, DDOT sent letters informing all 330 non-profits that purchase DDOT agency tickets of the proposed changes and community meetings. Additionally, DDOT has worked with Detroit Public Schools Community District to make it easier for students to ride DDOT buses by using only their valid student ID. Additionally, DDOT has met with advocacy groups, including Motor City Freedom Riders, Transportation Riders United, and local activists.

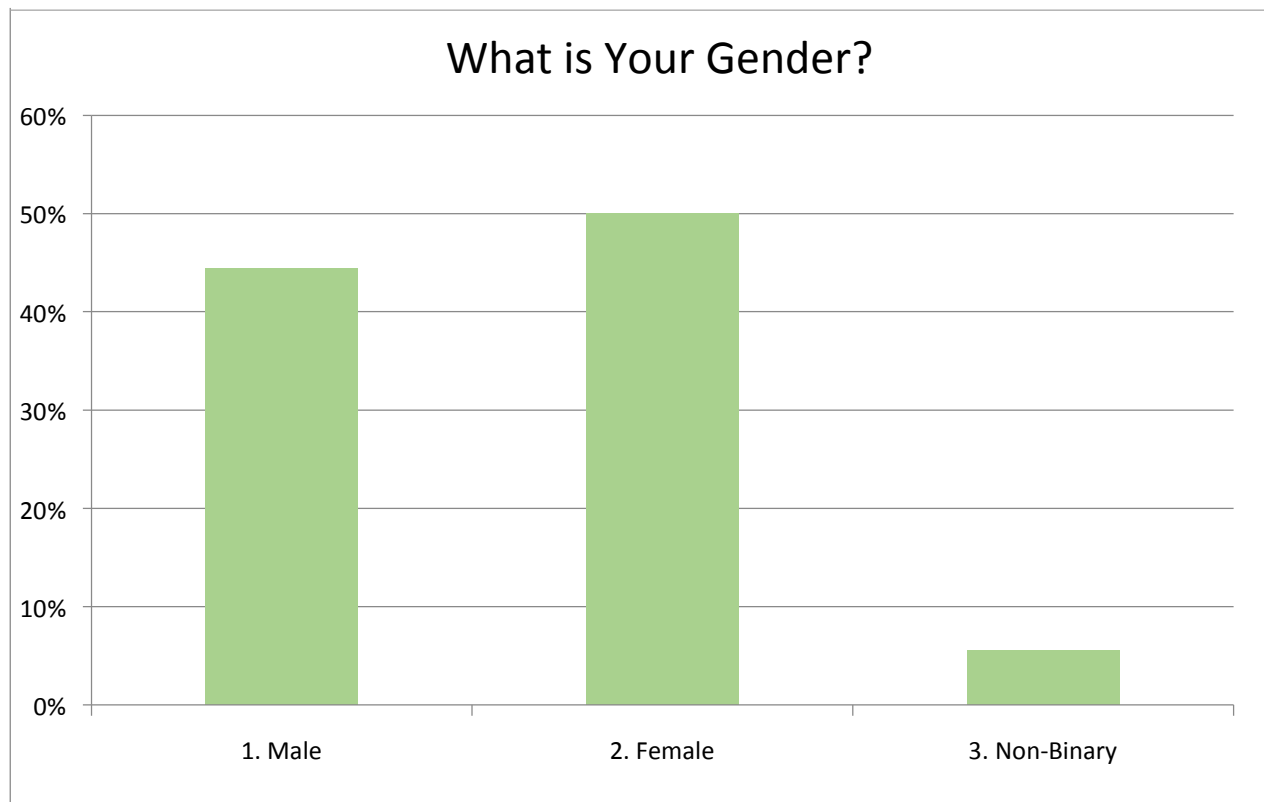
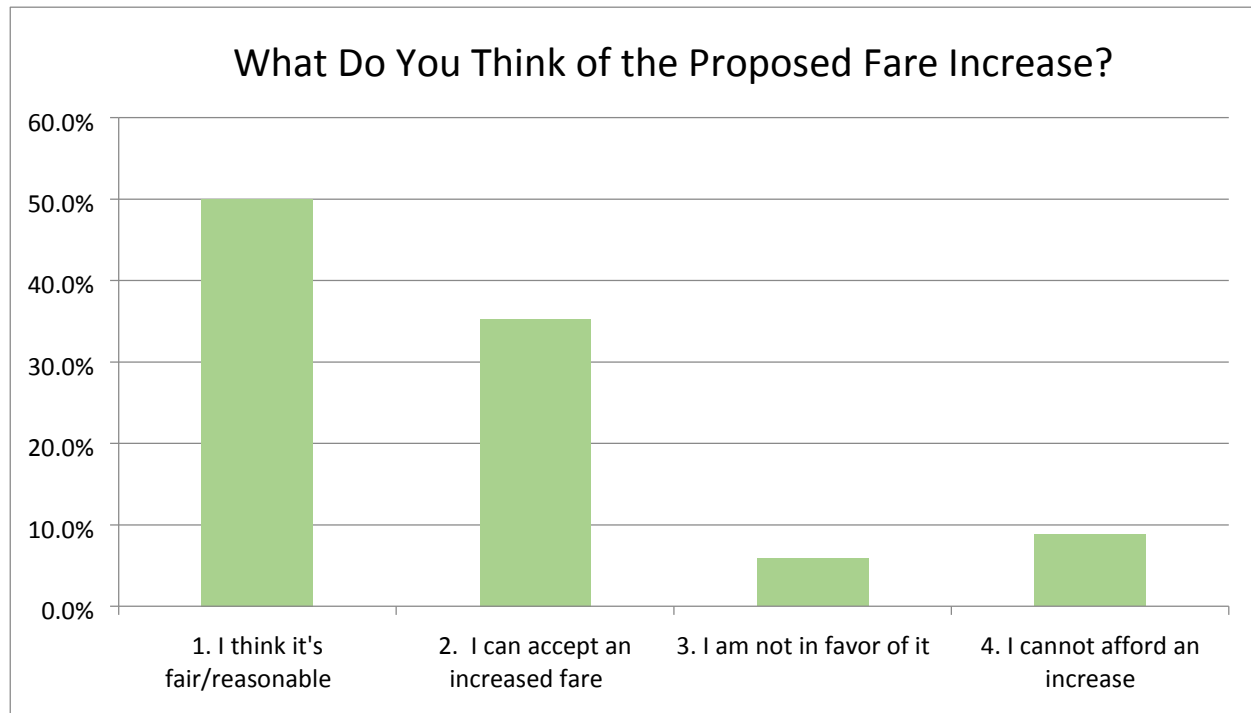
DDOT distributed a survey at the community input meetings to gather the following information:

- What do you think of the proposed fare increase?
- What is your gender?
- What is your race or ethnicity?

There were 34 completed surveys and the results indicated that 50% stated the fare change is reasonable and will not change their use of DDOT. While 35% stated that they can accept a fare increase if service is increased also. The remaining 15% stated they were either not in favor of the fare change or could not afford the fare change. When asked what your gender is, respondents were about equally male and female. When asked what is your race or ethnicity, 67% of respondents identified as African American, 25% identified as

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Caucasian, and the remaining 8% were split between Hispanic/Latino, Asian, and Native American. The survey full results are shown below.



## 9.0 EQUITY ANALYSIS

### Analysis

The *DDOT 2018 On-board Ridership Survey* categorized DDOT's ridership by minority/non-minority and low-income/non-low-income groups. Between 50% and 55% of each population type relies on the base cash fare and transfers. Table 8 below shows the number of minorities, non-minorities, low-income, and non-low-income riders that responded, which fare type each group uses, and the total cost of each fare type. The proposed fare restructuring does not have a simple one to one change from the current fares to the new proposed fares.

Table 8

Current Fare Usage by Rider Classification									
Fare Media		Minorities		Non-Minorities		Low Income		Non-Low-Income	
Type	Cost	Count	Cost	Count	Cost	Count	Cost	Count	Cost
10 Value Card	\$10.00	11	\$110.00	4	\$40.00	10	\$100.00	5	\$50.00
2 Ride 2 Transfer	\$3.50	35	\$122.50	4	\$14.00	32	\$112.00	7	\$24.50
Cash and Transfer	\$1.75	98	\$171.50	7	\$12.25	73	\$127.75	32	\$56.00
Cash Base Fare	\$1.50	809	\$1,213.50	67	\$100.50	624	\$936.00	252	\$378.00
DDOT 5 Day Pass	\$14.00	11	\$154.00	0	\$0.00	7	\$98.00	4	\$56.00
DDOT 7 Day Pass	\$14.40	12	\$172.80	2	\$28.80	9	\$129.60	5	\$72.00
DDOT Bi-Weekly Pass	\$27.50	33	\$907.50	1	\$27.50	22	\$605.00	12	\$330.00
DDOT Monthly Pass	\$47.00	52	\$2,444.00	2	\$94.00	34	\$1,598.00	20	\$940.00
Disabled Cash Fare	\$0.50	15	\$7.50	0	\$0.00	13	\$6.50	2	\$1.00
Disabled Transfer	\$0.10	4	\$0.40	1	\$0.10	3	\$0.30	2	\$0.20
Medicare Cash Fare	\$0.75	14	\$10.50	1	\$0.75	7	\$5.25	8	\$6.00
Medicare Transfer	\$0.10	7	\$0.70	1	\$0.10	5	\$0.50	3	\$0.30
Monthly Disabled Pass	\$17.00	14	\$238.00	0	\$0.00	13	\$221.00	1	\$17.00
Monthly Regional Pass	\$49.50	64	\$3,168.00	8	\$396.00	48	\$2,376.00	24	\$1,188.00
Monthly Senior Pass	\$17.00	32	\$544.00	1	\$17.00	25	\$425.00	8	\$136.00
Senior Cash Fare	\$0.50	41	\$20.50	7	\$3.50	25	\$12.50	23	\$11.50
Senior Transfer	\$0.10	15	\$1.50	2	\$0.20	10	\$1.00	7	\$0.70
Single Ride Ticket	\$1.50	48	\$72.00	4	\$6.00	34	\$51.00	18	\$27.00
SMART Top Up	\$0.25	24	\$6.00	3	\$0.75	15	\$3.75	12	\$3.00
Student Cash Fare	\$0.75	12	\$9.00	2	\$1.50	5	\$3.75	9	\$6.75
Student ID Card	\$2.00	24	\$48.00	2	\$4.00	18	\$36.00	8	\$16.00
Student Semester Pass	\$136.50	2	\$273.20	0	\$0.00	2	\$273.20	0	\$0.00
Student Single Ride Ticket	\$0.75	13	\$9.75	0	\$0.00	8	\$6.00	5	\$3.75
Student Transfer	\$0.25	5	\$1.25	2	\$0.50	5	\$1.25	2	\$0.50
Weekly Card	\$14.40	25	\$360.00	0	\$0.00	17	\$244.80	8	\$115.20
Transfer Ticket	\$0.25	36	\$9.00	4	\$1.00	30	\$7.50	10	\$2.50
<b>Totals</b>	<b>\$361.95</b>	<b>1,456</b>	<b>\$10,075.10</b>	<b>125</b>	<b>\$748.45</b>	<b>1,094</b>	<b>\$7,381.65</b>	<b>487</b>	<b>\$3,441.90</b>

## 10.0 FARE REVENUE ANALYSIS

Before considering any changes in our current fare structure, DDOT undertook a comprehensive fare revenue analysis. The fare revenue analysis consisted of a survey and revenue prediction.

### Fare Revenue Analysis Survey

The purpose of the fare revenue survey was to gauge which fares our riders currently use and what they might switch to, based on our five (5) proposed fares at that time. The fare revenue survey was created and distributed to the Operations Division Leaders to collect riders' response at five locations (5): Fairlane Shopping Center, Rosa Parks Transit Center, Bel Air Shopping Center at Eight Mile and Gratiot, State Fair Grounds, and St. John Hospital. A total of 1,186 survey responses were collected and compiled. Below is a percentage breakdown of which fares our riders said they would switch to:

*Table 9*

<b>Proposed Fare</b>	<b>% Percentage</b>
31 Day DDOT	24%
31 Day Regional	23%
Base Fare	20%
7 Day	18%
24 hour	15%

### Fare Revenue Prediction Analysis

The fare revenue survey responses was used to calculate a conversion factor. The calculations were based on three factors: Fiscal Year 2017 sales volume, the conversion factor, and the unit conversion (which is the predicted sales volume based on FY17 sales and an assumption of eight (8) rides per week). The results are as follows:

*Table 10*

<b>Fiscal Years 2017</b>	\$18,431,007.69
<b>Projected</b>	\$22,439,266.76
<b>Revenue Increase</b>	\$4,008,258.98 (+22%)

The fare conversion survey yielded 1,182 responses and the corresponding data was analyzed and usage percentages were calculated. The usage percentage helps DDOT understand which fares riders are using now and which of the new proposed fares riders will switch to. For example, we were able to determine that overall 24% of riders would like to switch to a 31-Day DDOT Pass from their current fare. This usage factor was important in determining the impact to minority and low-income populations because some fares are proposed to be eliminated and this data allows DDOT to see which fares riders would convert to if their normal fare did not exist.



### Overall Fare Conversion Data from Survey

The conversion factor calculations also include a conversion factor for the new fare media usage, which assumes that the average rider will use transit eight times a week, or four round trips. A rider converting from a bi-weekly pass to a seven day pass will need to purchase two new passes to cover the same time period. A rider converting from cash fare to a monthly pass will only need to purchase 1 pass rather than the 32 assumed individual payments. The costs and counts of fare types included in the ridership survey but not the conversion survey were calculated before aggregating them with the closest option. For example, the counts and costs of the five day pass and the seven day pass were calculated separately before combining the totals into the seven day pass. As there was only one option in the conversion survey for the seven day pass, the regional version is used in this calculation.

Table 11

Pass to Pass Conversion Factors										
Fare Types	4 Hour Ticket		24 hour Pass		7 day Pass		31 day DDOT Pass		31 day regional Pass	
	Conv.*	Usage	Conv.	Usage	Conv.	Usage	Conv.	Usage	Conv.	Usage
\$10 value card	1	11.76%	1	5.88%	1	29.41%	1	52.94%	1	0.00%
2R2T-Agency Ticket	2	16.67%	1	16.67%	0.25	0.00%	0.0625	16.67%	0.0625	50.00%
Adult - Agency Ticket	1	0.00%	0.5	35.71%	0.125	35.71%	0.03125	28.57%	0.03125	0.00%
Base - Reduced (Cash)	1	31.97%	0.5	18.37%	0.125	17.01%	0.03125	20.41%	0.03125	12.24%
Base - Regular (Cash)	1	23.98%	0.5	17.52%	0.125	22.28%	0.03125	20.41%	0.03125	15.82%
DDOT Bi-Weekly	16	6.25%	8	9.38%	2	15.63%	0.5	21.88%	0.5	46.88%
DDOT Monthly	32	6.36%	16	7.27%	4	9.09%	1	40.00%	1	37.27%
DDOT Monthly (Reduced)	32	7.69%	16	11.54%	4	3.85%	1	59.62%	1	17.31%
Regional Pass	32	4.00%	16	0.00%	4	1.00%	1	15.00%	1	80.00%
Student - Reduced/ID Card	1	38.60%	0.5	21.05%	0.125	8.77%	0.03125	14.04%	0.03125	17.54%
Student - Semester Pass	128	28.57%	64	14.29%	16	42.86%	4	14.29%	4	0.00%
Student Ticket	1	18.18%	0.5	3.03%	0.125	42.42%	0.03125	27.27%	0.03125	9.09%
Weekly Pass	8	17.39%	4	21.74%	1	8.70%	0.25	26.09%	0.25	26.09%

\*Conv. = conversion factor used based on an average 8 trips per week.

The population counts for current fare usage were broken out based on the usage percentage determined from the fare media survey. The usage percentage is the proportion of riders that would plan to switch to the proposed new pass from their current fare. For example, 11.76% of respondents said they would switch from the \$10 value card to the new 4 Hour Ticket. By applying each of these percentages to the new fares, the expected number of each new fare was calculated for the protected and non-protected populations. Multiplying the population counts by individual fare cost and the correction factor count yields the total cost

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for that population. Table 12 shows the breakdown of how many riders from protected and non-protected populations would purchase each type of pass.

Table 12

<b>Proposed Fare Usage by Rider Classification</b>								
	<b>Minority</b>		<b>Non-Minority</b>		<b>Low-Income</b>		<b>Non-Low-Income</b>	
<b>Fare Media</b>	<b>Count</b>	<b>Cost</b>	<b>Count</b>	<b>Cost</b>	<b>Count</b>	<b>Cost</b>	<b>Count</b>	<b>Cost</b>
			<b>Regular Fare</b>					
4-Hour Ticket	246.66	\$1,046.22	20.46	\$79.60	188.44	\$763.58	78.67	\$362.24
24 Hour Pass	216.87	\$1,153.34	17.92	\$70.63	165.21	\$825.29	69.59	\$398.68
7 Day Pass	255.35	\$1,515.09	21.78	\$114.66	194.30	\$1,092.40	82.83	\$537.35
31 Day DDOT	275.80	\$2,355.18	23.52	\$195.14	208.44	\$1,672.55	90.88	\$877.77
31 Day Regional	263.32	\$6,099.94	22.31	\$561.11	198.61	\$4,403.02	87.03	\$2,258.03
			<b>Reduced Fare</b>					
4-Hour Ticket	49.52	\$114.12	5.41	\$3.86	33.86	\$97.06	21.08	\$20.92
24 Hour Pass	29.19	\$230.01	2.86	\$6.44	20.58	\$192.79	11.47	\$43.67
7 Day Pass	33.79	\$246.86	3.95	\$6.43	22.25	\$220.52	15.49	\$32.77
31 Day DDOT	58.85	\$502.17	4.42	\$12.16	43.23	\$415.32	20.04	\$99.01
31 Day Regional	26.65	\$247.83	2.36	\$7.00	19.09	\$202.07	9.93	\$52.76
<b>Totals</b>	<b>1,456</b>	<b>\$13,510.76</b>	<b>125</b>	<b>1,057.03</b>	<b>1,094</b>	<b>\$9,884.60</b>	<b>487</b>	<b>\$4,683.18</b>

### Impacts to Minority and Low Income Populations

DDOT's Title VI fare program does not place a limit on the percentage of a cost increase, and because this is not an exact conversion, the actual increase in cost for each population can be a challenge to measure. In general the cost appears to increase between 30% and 40%. However, this does not take the added value of an easier and flexible fare experience, more time on the rolling passes, and money saved with four hours of unlimited rides and transfers built into the base fare. DDOT's Title VI Service standard for disparate impact and disproportionate burden policy state that the percent difference between protected and non-protected populations should be no more than 25%.

Table 13

<b>Cost Difference between Minority and Non-Minority Riders</b>		
	<b>Minority</b>	<b>Non-Minority</b>
Cost of Current Fare	\$10,075.10	\$748.45
Cost of Proposed Fare	\$13,510.76	\$1,057.03
Percent Increase	34.10%	41.23%
Result of Disparate Impact Percent*	<b>7.13%</b>	<b>No Disparate Impact</b>

*\*Calculated by taking the difference between the minority % increase and the non-minority % increase equals the result %*

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Table 14

<b>Cost Difference between Low Income and Non-Low-Income Riders</b>		
	<b>Low-Income</b>	<b>Non-Low-Income</b>
Cost of Current Fare	\$7,381.65	\$3,441.90
Cost of Proposed Fare	\$9,884.60	\$4,683.18
Percent Increase	33.91%	36.06%
Result of Disproportionate Burden Percent *	<b>2.15%</b>	<b>No Disproportionate Burden</b>

*\*Calculated by taking the difference between the minority % increase and the non-minority % increase equals the result %*

## 11.0 FORMAL PUBLIC HEARINGS

The formal public hearings were held on:

- Tuesday, October 2: Wilder Branch of the Detroit Public Library, 11AM – 12:30 PM □ Wednesday, October 3: Rosa Parks Transit Center, 5:30 PM – 7 PM
- Thursday, October 4: Redford Branch of the Detroit Public Library, 11 AM – 12 PM

Public comments were collected through comment forms at all public meetings and public hearings. Additional comments were collected through fax, mail, and email. The phone number and mailing and email addresses for public comments were provided on the comment forms. Information on name, address, email, stakeholder type, voluntary demographic data, transit system patronized, issues noted and specific comments were entered into a comment database.

In total, 47 people attended the meetings and provided written and/or verbal comments. Comments collected, which totaled 17, fell into the following categories:

### Concerns:

- Concern about the lack of on-time performance with fixed bus service
- Concerns about fare box reliability
- Concern about low-income riders being able to afford the increase
- Concern over the reasons for the fare increase
- Concern that the QLine and People Mover was not included in the fare restructuring
- Concern about the lack of communication between DDOT and the public
- Concern about discourteous drivers, will customer service be improved with fare increase
- Several respondents expressed concerns regarding the fare remaining the same

### Support for Proposed Changes

- Several of the comments supported the overall new fare structure
- Support the idea of changing period passes to rolling passes and the elimination of transfers

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- Support mobile fare payment option

### Suggestions

- Suggest to expand reduced fare categories to include low-income and university students.

Per DDOT's Public Participation Plan, we allowed the public 15 days to respond or submit written comments, either by email or in person. The Formal Public Hearing Presentation was posted to the DDOT website as a reference for the public and also indicated that written comments were due by Friday, October 19, 2018, 15 days from the final public hearing. The formal comment methods are shown below:

Email: [ddotcomments@detroitmi.gov](mailto:ddotcomments@detroitmi.gov)

Phone: (313) 933-1300

Mail or In Person:

Detroit Department of Transportation

Attention: Coordinator of Public Hearings

1301 East Warren Avenue

Detroit, MI 48207

A summary of the formal public comments are listed in Appendix C.

## **12.0 CONCLUSION**

The Detroit Department of Transportation proposes to simplify its current fare structure by implementing fare increases for fixed-route bus service, decrease reduced fare for Medicare recipients and students, eliminate transfers, change period passes to rolling passes, and introduce a 4-Hour ticket, 24-Hour pass and mobile fare payment option. Our analysis shows that our proposed changes do not create a disparate impact for our minority population nor does it create a disproportionate burden for our low-income population. Therefore, we propose the implementation of the new fare structure to help improve transit riders' experience in the City of Detroit and surrounding suburban communities.