

# Service Change Equity Analysis

**June 2024** 

Detroit
Department of
Transportation



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### Introduction

The Federal Transit Administration (FTA) requires transit agencies that receive federal funding to monitor their systems to ensure equitably distributed services in compliance with Title VI of the Civil Rights Act of 1964. To certify performance compliance, an equity analysis on major service changes is required to determine any disparate impact on minority populations or disproportionate burden on low-income populations.

The Detroit Department of Transportation (DDOT) 2023-2025 Title VI Program Plan defines a major service change as a modification meeting one or more of the following conditions:

- 1. New coverage area that is more than 0.2 miles from the original route.
- 2. A new route (excluding numbering/rebranding).
- 3. An elimination of a route (excluding numbering/rebranding).
- 4. An extension or shortening of a route by 0.25 miles or more.
- 5. A 20 percent or greater change in revenue miles or hours.
- 6. A change in service days on a route.
- 7. A change in service span on a route greater than 2 hours.
- 8. A change in headway greater than 15 minutes.

Four steps should be followed to complete an equity analysis:

- 1. Identify which routes, if any, have undergone a major service change based on the above service standards.
- 2. Notify the community of and receive feedback on the proposed or piloted changes via a Notice of Public Hearing.
- 3. Utilize the latest U.S Census Bureau race and poverty data to classify routes as minority and/or low-income.
- 4. Determine any disparate impact on minority populations or disproportionate burden on low-income populations.

Before beginning the equity analysis process, it is necessary to identify individual service changes by route.



## **June 2024 Service Changes**

As part of ongoing efforts to implement the DDOT Reimagined service restoration plan, several service changes were piloted in the June 2024 schedule. No routes were added or eliminated, but revenue hours and miles were altered, and some routes were geographically changed. Table 1 and the following text identify the individual service changes that were piloted in the June schedule as they were presented to the community at a public hearing on October 17, 2024. These changes will then be compared to the previous schedule in Step 1 of the equity analysis to identify any major service changes.

Table 1: List of June 2024 Service Changes by Route

Rou	te	June 2024 Service Changes					
3	Grand River	15-minute peak service on weekdays (base stays at 20).					
7	Seven Mile	15-minute peak service on weekdays (base stays at 20).					
8	Warren	20-minute peak service on weekdays (base stays at 30).					
10	Greenfield	15-minute peak service on weekdays (base stays at 20).					
13	Conner	45-minute peak service on weekdays (previously 1 hour).					
15	Chicago-Davison	45-minute peak service on weekdays (previously 1 hour).					
19	Fort	45-minute peak service on weekdays (previously 1 hour).					
23	Hamilton	Earlier/later trips on weekdays.					
27	Joy	50-minute daytime service (6 am to 6 pm) every day. 60-minute frequency at other times to meet Rosa Parks pulse.					
30	Livernois	45-minute peak service on weekdays (previously 1 hour).					
31	Mack	Start 30-minute service earlier in the morning on weekdays					
38	Plymouth	45-minute peak service on weekdays (previously 1 hour).					
39	Puritan	Peak period supplemental trips on weekdays.					
41	Schaefer	45-minute peak service on weekdays (previously 1 hour).					
42	Mid-City Loop	Earlier/later trips on weekdays					
43	Schoolcraft	45-minute peak service on weekdays (previously 1 hour).					
52	Chene	45-minute peak service on weekdays (previously 1 hour).					
54	Wyoming	45-minute peak service on weekdays (previously 1 hour).					
60	Evergreen	20-minute peak service on weekdays (base stays at 30)					
67	Cadillac-Harper	45-minute peak service on weekdays (previously 1 hour).					
68	Chalmers	45-minute peak service on weekdays (previously 1 hour).					

In addition to the changes listed above, routes 4, 12, 17, 30, and 54 saw timetable and routing adjustments to accommodate new stops at Jason Hargrove Transit Center (JHTC). These changes were first made as detours while the April schedule was still in effect, before being permanently implemented in the June schedule.



## **Step 1: Identify Major Service Changes**

To determine if any of the routes that received additional service underwent major service changes, the revenue miles and hours from the April schedule were compared to the June schedule and percent change was calculated. Table 2 below shows these calculations by route and minority and/or low-income classification. See Step 3 below (page 5) for an explanation of the minority and low-income route classifications. For the full table, see Appendix B.

Table 2: Revenue Hour and Mile Changes by Route and Title VI Route Classification

		Weekly Change In		Major Service	Minority		
Route		Hours Miles		Change	Route	Low-Income Route	
4	Woodward	12.68%	2.24%	No	Yes	Yes	
3	Grand River	5.64%	5.41%	No	Yes	Yes	
7	Seven Mile	4.89%	4.69%	No	Yes	Yes	
8	Warren	7.51%	6.49%	No	Yes	Yes	
10	Greenfield	9.45%	7.90%	No	Yes	Yes	
12	Conant	-0.13%	0.00%	No	Yes	Yes	
13	Conner	-2.07%	-2.14%	No	Yes	Yes	
15	Chicago-Davison	6.93%	6.86%	No	Yes	Yes	
17	Eight Mile	-1.98%	-0.40%	No	Yes	Yes	
19	Fort	-0.12%	0.05%	No	No	Yes	
23	Hamilton	8.71%	9.12%	No	Yes	Yes	
27	Joy	15.50%	15.26%	No	Yes	Yes	
30	Livernois	9.68%	10.58%	No	Yes	Yes	
31	Mack	4.67%	5.10%	No	Yes	Yes	
38	Plymouth	9.82%	9.77%	No	Yes	Yes	
39	Puritan	10.92%	10.99%	No	Yes	Yes	
41	Schaefer	9.02%	8.98%	No	Yes	Yes	
42	Mid-City Loop	11.86%	16.01%	No	Yes	Yes	
43	Schoolcraft	9.16%	8.83%	No	Yes	Yes	
52	Chene	9.58%	9.19%	No	Yes	Yes	
54	Wyoming	10.07%	10.90%	No	Yes	Yes	
60	Evergreen	20.65%	20.65%	YES	Yes	Yes	
67	Cadillac-Harper	0.11%	-0.21%	No	Yes	Yes	
68	Chalmers	9.72%	9.80%	No	Yes	Yes	
2023	2023-2025 Major Service Change Policy: A 20 percent or greater change in revenue miles or hours.						

The implementation of weekday 20-minute peak service on route 60 Evergreen was enough to increase both revenue miles and hours by 20.65%. This is considered a major service change.

Moreover, five routes were permanently reconfigured to include stops at JHTC. Although all routes naturally convene near the transit center on Eight Mile, it's necessary to calculate the difference in the total length of the routes and determine if any have been extended or shortened by 0.25 miles or more.



The overall length of each route was calculated using ArcGIS Pro mapping software and compiled in Table 3 below. See Figure B1 on page 12 for a map comparing the original route to the current alignment at JHTC.

Table 3: JHTC Route Modifications by Length in Miles

Jason Hargrove Transit Center (JHTC) Routes Length Comparison in Miles						
Routes Served	Previous Length	Current Length	Change in Length	Minority Route	Low Income Route	Major Service Change
4 Woodward	17.68	18.60	0.92	Yes	Yes	YES
12 Conant	23.84	24.81	0.97	Yes	Yes	YES
17 Eight Mile	48.30	48.64	0.34	Yes	Yes	YES
30 Livernois	29.72	29.49	-0.22	Yes	Yes	No
54 Wyoming	31.09	31.26	0.17	Yes	Yes	No
2023-2025 Major Service Change Policy: An extension or shortening of a route by 1/4 mile.						

Routes 4, 12, and 17 have been extended by over 0.25 miles.

Based on the analysis of revenue miles and hours, and the comparison of overall route length in miles, four routes have undergone major service changes:

- 1. 4 Woodward
- 2. 12 Conant
- 3. 17 Eight Mile
- 4. 60 Evergreen

## **Step 2: Public Engagement**

On October 17, 2024, DDOT held a virtual Notice of Public Hearing to notify the community of the proposed January service changes and receive feedback on the piloted June changes. DDOT also accepted comments via post and email until November 18, 2024. Prior to the October Notice of Public Hearing event, the proposed January changes and the piloted June changes were available for viewing on the DDOT website and social media platforms, and flyers were distributed to the public at DDOT transit facilities and other relevant locations. See Appendix A (page 9) for all public hearing materials.

Most participants were concerned with the upcoming January changes and only one participant made a comment regarding the piloted June changes. This is likely because many of the changes were frequency increases that built on existing service, and customers were already accustomed to the improvements. Moreover, the location for JHTC (formerly State Fair Transit Center) and the new route reconfigurations were already vetted by the community when they were presented to the public in August 2021.

#### **Online Public Comments**

No comments were submitted via email or post.



#### **Virtual Public Meeting Comments**

<u>Larry Donald Verse:</u> "I appreciate DDOT for what it has done so far, especially the improvements. And fundamentally, I like all of your changes... except I believe that [for] Linwood and Hamilton, instead of the time that's there, the time should be increased to at least 30 minutes at all times during the day."

### **Step 3: Minority and Low-Income Route Classifications**

To determine if the service changes affect minority or low-income populations, routes that serve above-the-average-threshold minority and low-income tracts were identified using ArcGIS mapping software (see figure 1 and 2 below). DDOT utilizes U.S. Census Bureau data as reported by American Community Survey (ACS). This analysis used 2022 race and poverty tables from the latest ACS 5-year estimates. All citizens not defined under the "white only" race/ethnicity classification are considered minority. Households reported below the federal poverty line are considered low-income.

The DDOT service area is currently defined as tracts within one half-mile of all DDOT bus routes. The minority and low-income populations of the service area are divided by the total population to determine the system averages for each. Based on these calculations, 71 percent of the DDOT service area population is minority and 24 percent is low-income. These are the thresholds that were used to classify census tracts as minority and/or low-income.

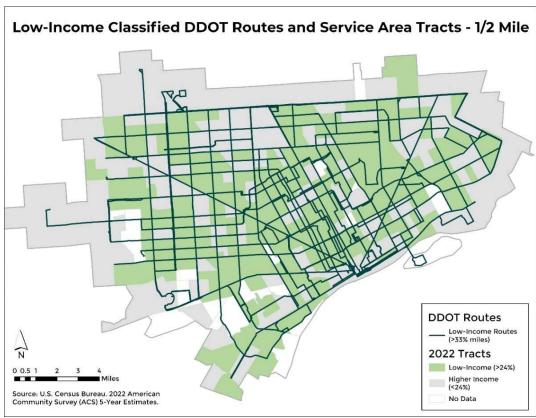
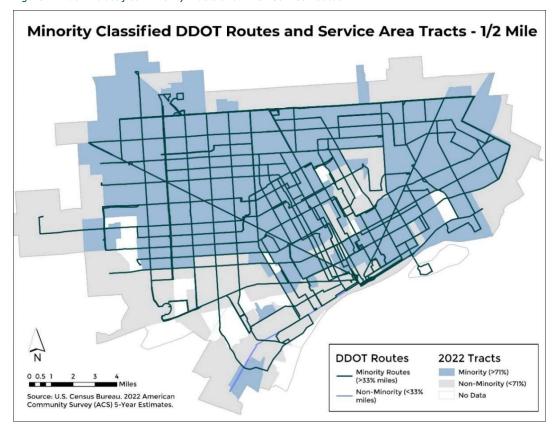


Figure 1: Title VI Classified Low-Income Tracts and DDOT Service Routes

Figure 2: Title VI Classified Minority Tracts and DDOT Service Routes



The service area maps are then used to determine which DDOT bus routes travel through at least 33 percent (or one third) minority or low-income classified tracts. If they do, they are considered minority or low-income routes, respectively. Due to Metro Detroit's unique racial and economic makeup, minority and low-income tracts are distributed throughout the service area, and only one route is classified as non-minority (19 Fort). All routes are classified as low-income. Route classifications are shown above in *Figure 1* and *Figure 2* and referenced back in *Table 1*. The percentage of each route's miles through minority and low-income tracts can be found below in *Table 4*.



Table 4: DDOT Routes by Title VI Minority and Low-Income Route Classifications

			In Minority Tracts		In Low Income Tracts			
	Route	Current Length	Length	%	Is Minority	Length	%	Is Low-Income
1	Vernor	17.11	7.87	46.00%	Yes	15.16	88.60%	Yes
2	Michigan	21.13	9.04	42.80%	Yes	16.67	78.89%	Yes
3	Grand River	29.51	27.78	94.15%	Yes	27.10	91.82%	Yes
4	Woodward	19.20	18.32	95.39%	Yes	18.32	95.39%	Yes
5	Van Dyke- Lafayette	22.69	21.02	92.64%	Yes	21.02	92.64%	Yes
6	Gratiot	21.07	19.20	91.12%	Yes	18.86	89.49%	Yes
7	Seven Mile	39.84	39.84	100.00%	Yes	35.37	88.78%	Yes
8	Warren	40.36	36.57	90.60%	Yes	40.36	100.00%	Yes
9	Jefferson	14.89	12.77	85.76%	Yes	12.77	85.76%	Yes
10	Greenfield	26.12	19.05	72.94%	Yes	21.52	82.39%	Yes
11	Clairmount	30.61	29.11	95.10%	Yes	30.61	100.00%	Yes
12	Conant	24.81	22.28	89.81%	Yes	23.05	92.92%	Yes
13	Conner	16.13	16.13	100.00%	Yes	16.13	100.00%	Yes
15	Chicago- Davison	25.81	25.81	100.00%	Yes	25.81	100.00%	Yes
16	Dexter	37.66	36.63	97.24%	Yes	35.00	92.92%	Yes
17	Eight Mile	47.84	47.84	100.00%	Yes	42.86	89.59%	Yes
18	Fenkell	30.33	30.08	99.17%	Yes	30.33	100.00%	Yes
19	Fort	16.80	5.31	31.64%	No	14.82	88.19%	Yes
23	Hamilton	22.49	22.49	100.00%	Yes	22.49	100.00%	Yes
27	Joy	31.64	26.50	83.76%	Yes	26.54	83.88%	Yes
29	Linwood	20.00	17.73	88.63%	Yes	17.77	88.86%	Yes
30	Livernois	29.53	21.88	74.08%	Yes	25.76	87.22%	Yes
31	Mack	22.19	22.13	99.70%	Yes	22.13	99.70%	Yes
32	McNichols	48.37	48.37	100.00%	Yes	48.37	100.00%	Yes
38	Plymouth	41.85	36.39	86.96%	Yes	34.10	81.48%	Yes
39	Puritan	14.72	14.72	100.00%	Yes	14.72	100.00%	Yes
40	Russell	28.16	26.29	93.37%	Yes	26.29	93.37%	Yes
41	Schaefer	27.64	19.11	69.14%	Yes	25.57	92.53%	Yes
42	Mid-City Loop	12.68	12.68	100.00%	Yes	12.68	100.00%	Yes
43	Schoolcraft	23.17	23.17	100.00%	Yes	21.74	93.82%	Yes
46	Southfield	24.96	19.41	77.77%	Yes	20.14	80.67%	Yes
47	Tireman	23.52	23.52	100.00%	Yes	23.52	100.00%	Yes
52	Chene	25.38	21.17	83.40%	Yes	23.71	93.42%	Yes
54	Wyoming	31.27	20.71	66.25%	Yes	26.56	84.95%	Yes
60	Evergreen	23.45	19.36	82.59%	Yes	16.77	71.54%	Yes
67	Cadillac-Harper	25.71	23.77	92.43%	Yes	23.77	92.43%	Yes
68	Chalmers	18.65	18.65	100.00%	Yes	16.84	90.32%	Yes
		(2024). 2018-2022 Am		nunity Survev 5	-Year Estimates. Ret		https://data.c	



## **Step 4: Determine Disparate Impact or Disproportionate Burden**

Having identified major service changes by route and route classification, the benefits and/or disadvantages for the populations they serve must be discussed. DDOT's disparate impact policy, as stated in the 2023-2025 Title VI Program Plan, is as follows: "A major service change to the bus system will be deemed to have disparate impact on minority populations if 20% or more of the affected service falls in census [tracts] with minority populations higher than the DDOT service area average." 19 Fort is the only DDOT bus route that is non-minority. Although the route saw the implementation of 45-minute peak service on weekdays, supplemental trips were removed because of reduced demand during summer break, and there was only a -0.12% and a 0.05% change in weekly revenue hours and miles, respectively. Collectively, minority routes saw a 4.40% and a 4.01% increase in weekly revenue hours and miles. Thus, minority populations saw greater service improvements than non-minority populations, and no disparate impact can be found.

Similarly, DDOT's disproportionate burden policy states: "A major service change to the bus system will be deemed to have a disproportionate burden if 20% or more of a service reduction falls in census block [tract] groups with low-income populations higher than the DDOT service area average." Since all DDOT bus routes are currently classified as low-income, it is not possible for a major service change to be considered a disproportionate burden on low-income populations.

### **Conclusion**

In the June 2024 schedule, four routes underwent major service changes. The pilot of 20-minute peak service on route 60 Evergreen resulted in a 20.65% increase in both revenue miles and hours. Routes 4 Woodward, 12 Conant, and 17 Eight Mile were permanently rerouted to include stops at Jason Hargrove Transit Center, resulting in the overall length of the routes being extended by over 0.25 miles. All four routes are minority and low-income, but no disproportionate burden or disparate impact can be found. All changes were presented to the community at a public hearing on October 17, 2024.



### **Appendix A**

### **Public Hearing Materials**

Figure A1: Notice of Public Hearing Graphic as Distributed to the Public



DDOT is hosting a virtual public hearing on Thursday, October 17, 2024, at 5:00 p.m. to get feedback on proposed service enhancements that would take effect on January 20, 2025, as well as changes that were implemented on June 24, 2024.

• When: Thursday, October 17

• Time: 5 p.m.

Zoom Call-in Number: 1 (312)626-6799

Meeting ID: 962-6808-2855Direct Zoom link: Click to join

If you need reasonable accommodation to attend this meeting, please contact the ADA Coordinator at least seven (7) business days in advance of the meeting. The ADA Coordinator can be reached by phone at 313-316-2793 or by email at <a href="mailto:DDOT-ADA@detroitmi.gov">DDOT-ADA@detroitmi.gov</a>. Please note that this is a video conferencing meeting, and a General Sign Language interpreter is present and does not need to be requested.



#### Proposed January 2025 Service Enhancements (\*Now April 2025)

- 2 Michigan, 5 Van-Dyke-Lafayette and 31 Mack 20-minute peak service on weekdays
- 4 Woodward improve daytime frequency to every 12 minutes on weekdays, change downtown routing with a layover on Times Square adjacent to Rosa Parks Transit Center (\*This change WILL be implemented in January)
- 18 Fenkell improve weekday daytime frequency to every 40 minutes
- 17 Eight Mile improve midday base service to every 20 minutes on weekdays
- 3 Grand River, 7 Seven Mile, 10 Greenfield improve midday base to every 15 minutes on weekdays
- Saturday and Sunday span improvement (most will run from 7:00am to 9:00 pm) 12 Conant, 13
  Conner, 15 Chicago-Davison, 18 Fenkell, 23 Hamilton, 27 Joy, 29 Linwood, 30 Livernois, 38
  Plymouth, 39 Puritan, 41 Schaefer, 42 Mid-City Loop, 43 Schoolcraft, 52 Chene, 54 Wyoming, 67
  Cadillac-Harper, 68 Chalmers
- 3 Grand River, 6 Gratiot, and 7 Seven Mile improve Saturday daytime to every 20 minutes
- 1 Vernor and 4 Van Dyke 45-minute Sunday service
- 8 Warren 30-minute Saturday and 45-minute Sunday service
- 29 Linwood 50-minute daytime seven days/week
- 23 Hamilton 45-minutes peak service on weekdays

#### June 2024 Service Changes recently implemented

- 3,7, and 10 15-minute peak service on weekdays (base stays at 20)
- 8, 60 20-minute peak service on weekdays (base stays at 30)
- 13, 15, 19, 30, 38, 41, 43, 52, 54, 67, 68 45-minute peak service on weekdays
- 23, 42 earlier/later trips on weekdays
- 31 start 30-minute service earlier in the morning on weekdays
- 27 50-minute daytime service (6 am to 6 pm) seven days/week, 60 at other times to meet Rosa Parks pulse. Separate the current interline, improved daytime frequency on 29 implemented in September
- 4, 12, 17, 30, 54 Timetable and routing adjustments for Jason Hargrove Transit Center
- 39 Peak period supplemental trips on weekdays

#### Comments may be submitted by:

Email: DDOTcomments@detroitmi.gov

Mail:

Detroit Department of Transportation ATTN: Jan 2025 Hearing 100 Mack Ave., Detroit, MI 48201



## **Appendix B**

Table B1: Weekly Change in Revenue Miles and Hours by Route and Title VI Route Classification

		Weekly C	Change In	Major Service	Minority	Low-Income
Rou	te	Hours Miles		Change	Route	Route
1	Vernor	0.00%	0.10%	No	Yes	Yes
2	Michigan	0.00%	0.00%	No	Yes	Yes
3	Grand River	5.64%	5.41%	No	Yes	Yes
4	Woodward	12.68%	2.24%	No	Yes	Yes
5	Van Dyke-Lafayette	0.00%	-0.33%	No	Yes	Yes
6	Gratiot	0.00%	-0.30%	No	Yes	Yes
7	Seven Mile	4.89%	4.69%	No	Yes	Yes
8	Warren	7.51%	6.49%	No	Yes	Yes
9	Jefferson	0.31%	0.01%	No	Yes	Yes
10	Greenfield	9.45%	7.90%	No	Yes	Yes
11	Clairmount	0.00%	0.00%	No	Yes	Yes
12	Conant	-0.13%	0.00%	No	Yes	Yes
13	Conner	-2.07%	-2.14%	No	Yes	Yes
15	Chicago-Davison	6.93%	6.86%	No	Yes	Yes
16	Dexter	0.00%	1.73%	No	Yes	Yes
17	Eight Mile	-1.98%	-0.40%	No	Yes	Yes
18	Fenkell	0.00%	0.00%	No	Yes	Yes
19	Fort	-0.12%	0.05%	No	No	Yes
23	Hamilton	8.71%	9.12%	No	Yes	Yes
27	Joy	15.50%	15.26%	No	Yes	Yes
29	Linwood	0.00%	0.07%	No	Yes	Yes
30	Livernois	9.68%	10.58%	No	Yes	Yes
31	Mack	4.67%	5.10%	No	Yes	Yes
32	McNichols	0.00%	0.00%	No	Yes	Yes
38	Plymouth	9.82%	9.77%	No	Yes	Yes
39	Puritan	10.92%	10.99%	No	Yes	Yes
40	Russell	0.00%	-0.21%	No	Yes	Yes
41	Schaefer	9.02%	8.98%	No	Yes	Yes
42	Mid-City Loop	11.86%	16.01%	No	Yes	Yes
43	Schoolcraft	9.16%	8.83%	No	Yes	Yes
46	Southfield	0.00%	0.00%	No	Yes	Yes
47	Tireman	1.81%	0.00%	No	Yes	Yes
52	Chene	9.58%	9.19%	No	Yes	Yes
54	Wyoming	10.07%	10.90%	No	Yes	Yes
60	Evergreen	20.65%	20.65%	YES	Yes	Yes
67	Cadillac-Harper	0.11%	-0.21%	No	Yes	Yes
68	Chalmers	9.72%	9.80%	No	Yes	Yes

Figure B1: JHTC Route Alignment Comparison



## **Governing Official Signature**

DDOT's Title VI Service Change Equity Analysis for the June 2024 Service Changes has been submitted to the Director for consideration, awareness, and approval.

Signed by:  Robert Cramer  BBCBTCOF0420490		2/12/2025
Robert Cramer	Date	
Executive Director of Transit		
City of Detroit		