



Detroit Department of Transportation

November 2021 Service Change Equity Analysis

Governing Official Signature

The Federal Transit Administration mandates that all primary recipients complete an equity analysis whenever an agency proposes a major service change. DDOT defines a major service change as: the addition of, or reduction in, more than 20% of revenue hours and/or revenue miles on any one route; shifting a route alignment by more than 1/5 mile; new routes or route eliminations (excluding renumbering or rebranding); and extensions or shortenings of 1/5 mile or more.

The Title VI analysis compares the proposed November service to the service that was in place in early 2020 prior to the COVID-19 pandemic. Emergency changes made during the pandemic were not analyzed for Title VI impacts nor did they go through a Public Hearing process prior to their implementation. Based on the Major Service Change definition, it was found that all routes in the system with the exception of 5, 8, 17, 32, 39, 40, 41, 46, 52, 54, and 60 will have undergone major service changes.

Although there are negative impacts on Title VI and Environmental Justice -protected communities, the analysis found that these impacts were distributed in an equitable manner (within DDOT tolerance levels), resulting in no disparate impacts or disproportionate burdens on the minority or low-income communities.

These service changes were proposed due to DDOT's temporary inability to deliver the service levels promised on our schedules during the COVID-19 pandemic. To the greatest extent possible, the vast majority of passengers on eliminated routes and route segments have alternative services available within walking distance. While the reduction in the schedules and routes is not desirable, the alternative of continuing to operate only a portion of the schedule was determined to be unacceptable. The proposed November changes will result in a more consistent and reliable service which will be to the benefit of all passengers.

DDOT's Title VI Service Equity Analysis for November 2021 Service Changes has been submitted to the Director for consideration, awareness, and approval.

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10/18/2021

C. Mikel Oglesby

Date

Executive Director of Transit

City of Detroit

Introduction

In compliance with Title VI of the Civil Rights Act of 1964 and Executive Order 12898 of 1994 (Federal Actions to Address Environmental Justice in Minority and Low-Income Populations), the Federal Transit Administration (FTA) requires all transit agencies that receive federal funding monitor the performance of their systems, ensuring services are made available and/or distributed equitably. One component of ensuring compliance is performing an equity analysis for any major service changes to determine its impact on minority (race, color, or national origin) and low-income populations.

In response to the COVID-19 pandemic, DDOT implemented emergency schedules in April 2020, decreasing weekday service levels by approximately 15 percent to more closely match weekend service. Saturday and Sunday service levels were unchanged. DDOT continues to face COVID-related challenges and is unable to deliver all scheduled service on a reliable basis. In order to provide riders with reliable and predictable service schedules, DDOT is making a second round of service cuts in November 2021 to align service levels with operator availability.

DDOT defines a major service change as: “the addition of, or reduction in, more than 20 percent of revenue hours and/or revenue miles on any one route.” Route changes meeting one or more of the following criteria should be reviewed in an equity analysis:

- New coverage area that is more than 0.2 miles from the original location.
- A new route.
- An elimination of a route.
- An extension or shortening of a route by 0.2 miles or more.
- A 20 percent change in revenue miles or hours.

This document outlines the methodology and results of a service change equity analysis conducted as part of the November 2021 service changes and the community engagement process.¹

Service Change Equity Analysis

Step 1: Identify Routes Undergoing a Major Service Change

Table 1 below shows the percent change in weekly revenue hours and revenue miles for each route between pre-COVID service levels (February 2020) and November 2021 service levels. All routes except Routes 5, 8, 17, 32, 39, 40, 41, 46, 52, 54, and 60 have undergone a major service change.

Table 1: Revenue Hour and Mile Changes by Route and Route Classifications

Route	Weekly Change in Revenue Hours	Weekly Change in Revenue Miles	Major Service Change	Minority Route	Low-Income Route
1 Vernor	-29%	-22%	YES	NO	YES
2 Michigan	-37%	-33%	YES	YES	YES
3 Grand River	-28%	-27%	YES	YES	YES
4 Woodward	-36%	-37%	YES	YES	YES
5 Van Dyke/Lafayette	-13%	-8%	NO	YES	NO

¹ The analysis follows the prescribed methodology detailed in DDOT’s *Title VI Program Plan 2021-2023* (2020).

Route	Weekly Change in Revenue Hours	Weekly Change in Revenue Miles	Major Service Change	Minority Route	Low-Income Route
6 Gratiot	-21%	-22%	YES	YES	YES
7 Seven Mile	-23%	-22%	YES	YES	YES
8 Warren	-15%	-14%	NO	YES	YES
9 Jefferson	-24%	-23%	YES	YES	NO
10 Greenfield	-21%	-20%	YES	YES	YES
11 Clairmount	-100%	-100%	YES	YES	YES
12 Conant	-10%	-24%	YES	YES	YES
13 Conner	-23%	-26%	YES	YES	YES
15 Chicago/Davison	-40%	-44%	YES	YES	YES
16 Dexter	-24%	-21%	YES	YES	YES
17 Eight Mile	-19%	-16%	NO	YES	NO
18 Fenkell	-34%	-30%	YES	YES	YES
19 Fort	-47%	-41%	YES	NO	YES
23 Hamilton/John R	-34%	-32%	YES	YES	YES
26 Junction	-100%	-100%	YES	YES	YES
27 Joy Rd	-37%	-32%	YES	YES	YES
29 Linwood	-33%	-28%	YES	YES	YES
30 Livernois	-21%	-14%	YES	YES	YES
31 Mack	-21%	-22%	YES	YES	YES
32 McNichols	-4%	-5%	NO	YES	YES
38 Plymouth	-28%	-28%	YES	YES	YES
39 Puritan	-13%	-18%	NO	YES	YES
40 Russell	-3%	1%	NO	YES	YES
41 Schaefer	-12%	-13%	NO	YES	YES
42 Mid-City Loop	-50%	-47%	YES	YES	YES
43 Schoolcraft	-15%	-23%	YES	YES	YES
46 Southfield	6%	-9%	NO	YES	YES
47 Tireman	-100%	-100%	YES	YES	YES
52 Chene	-19%	-20%	NO	YES	YES
54 Wyoming	-13%	-4%	NO	YES	YES
60 Evergreen	-18%	-19%	NO	YES	YES
67 Cadillac/Harper	-30%	-24%	YES	YES	YES
68 Chalmers	-23%	-24%	YES	YES	YES
80 Villages Direct	-100%	-100%	YES	YES	YES
89 Southwest Direct	-100%	-100%	YES	YES	YES
92 Rosedale Express	-100%	-100%	YES	YES	YES
95 Ryan Express	-100%	-100%	YES	YES	YES
96 Joy Express	-100%	-100%	YES	YES	YES

Step 2: Identify Low-Income and Minority Routes

To determine whether the service changes have a disparate impact on minority populations or place a disproportionate burden on low-income populations, it is important to identify which routes serve populations with higher-than-average minority and low-income populations. The methodology for this process is described below. DDOT Title VI equity analyses utilize U.S. Census Bureau data. The minority population is defined as all people not counted under the “white only” race/ethnicity classification. Low-income is defined as the population reported below the federal poverty line.²

1. Define the Service Area: The DDOT service area is defined as one half-mile around all DDOT bus routes.

2. Calculate Service Area Average for Low-Income and Minority Populations: The total minority population and low-income population within the service area as reported by 2019 American Community Survey are divided by the service area’s total population to find the system average. Based on 2019 ACS data, 79 percent of the DDOT service area population is minority and 33 percent is low-income.

3. Map Block Groups above System Average: The FTA defines a minority transit route as one that has at least one-third (33 percent) of its total revenue mileage in census block groups with a minority percentage that exceeds the systemwide average. A similar methodology is applied to determine low-income routes as part of the equity analysis. Low-income populations are not a protected class under Title VI, but FTA requires their inclusion in equity analyses. The census block groups with greater than 79 percent minority populations and 33 percent low-income populations were mapped as shown below in *Figure 1* and *Figure 2*.

² As noted in DDOT’s *Title VI Program Plan 2021-2023* (2020), “While some agencies expand their low-income thresholds to capture people above the poverty line, they tend to serve populations with a median income well above the poverty line. Detroit’s median income is at the federal poverty line and agencies with similar service areas use the same threshold.”

Figure 1: Title VI Low Income Block Groups

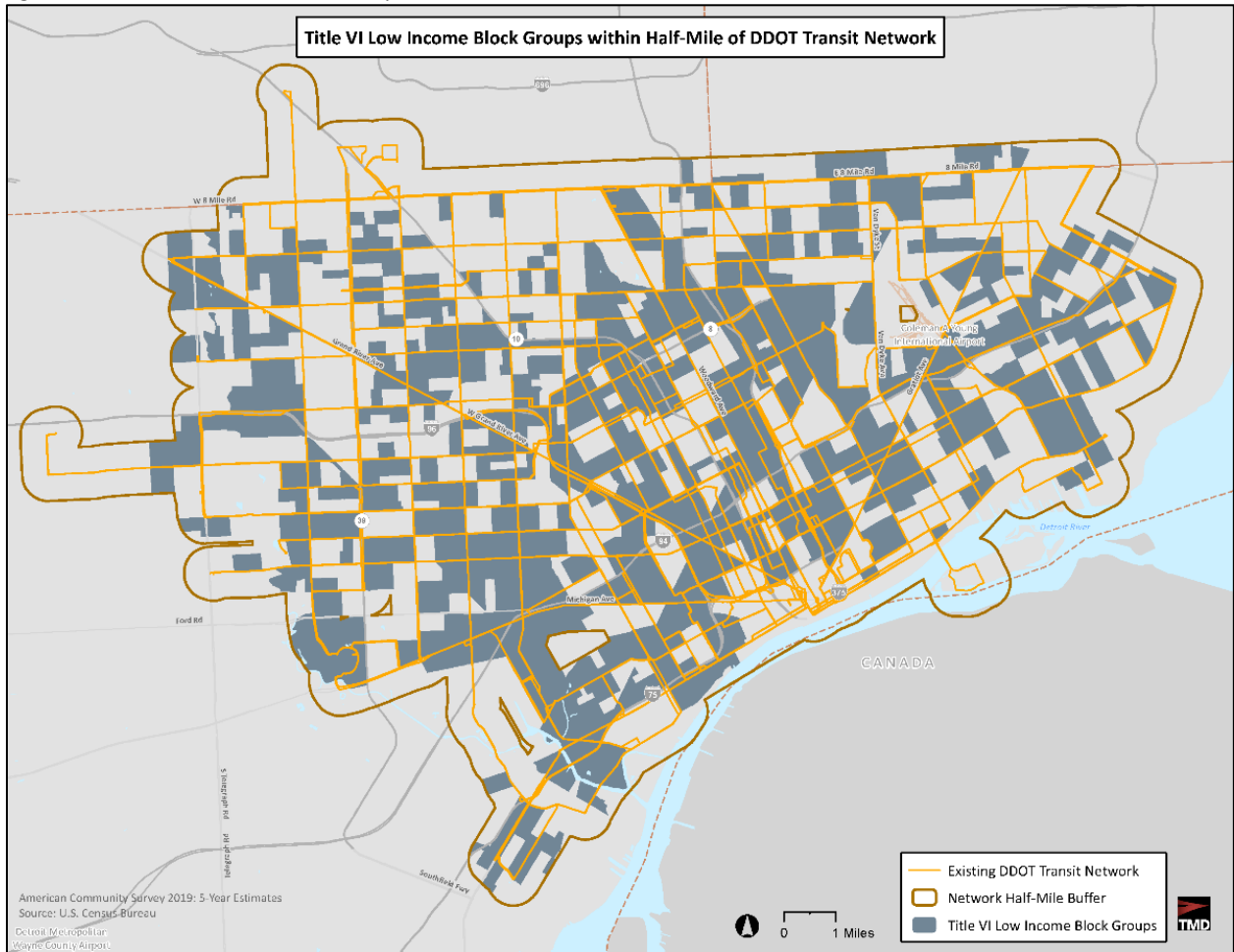
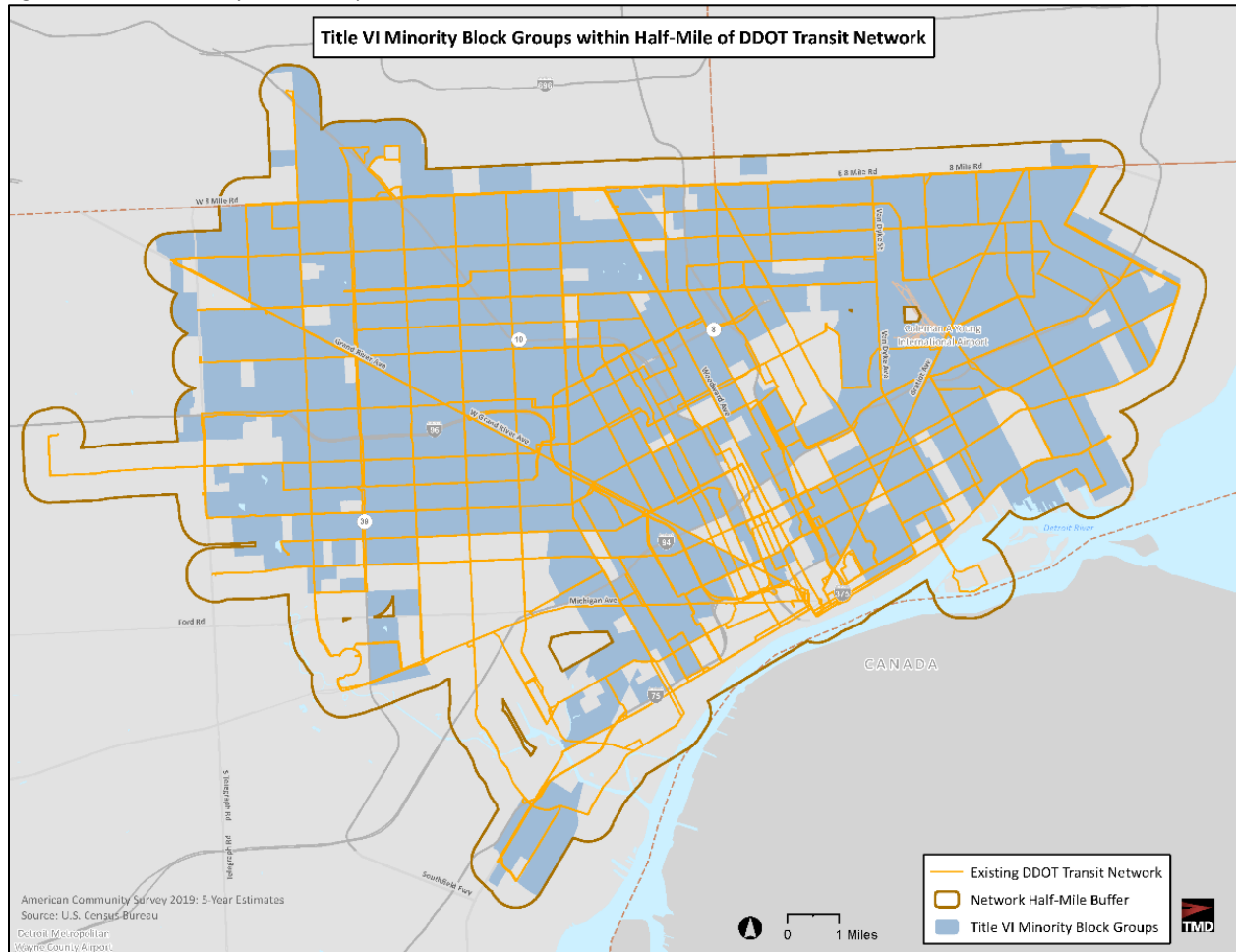


Figure 2: Title VI Minority Block Groups



4. **Identify Low-Income and Minority Routes:** Using the maps shown above, the distances each route travels through low-income and minority block groups that exceed the systemwide average were calculated. As low-income and minority populations are so evenly dispersed throughout the service area, all but two routes have greater than a third of their revenue miles serving minority block groups (Routes 1-Vernor and 23-Hamilton) and all but three routes have greater than a third of their revenue miles serving low-income block groups (Routes 5-Van Dyke/Lafayette, 9-Jefferson, and 17-Eight Mile). The route classifications are shown above in *Table 1*. The percent of each route’s miles in low-income and minority block groups can be found in the Appendix below.

Step 3: Compare New Service Impacts for Disparate Impact or Disproportionate Burden

After identifying which routes are undergoing a major service change and classifying them as minority or low-income routes or not, the next step in the service change equity analysis is to compare the benefits or impacts between the route classifications. The routes undergoing a major service change were grouped by classification and the existing and proposed revenue hours and miles were summed to identify and compare the cumulative percent changes in service. DDOT’s Title VI policy states, “If Title VI specified populations see a reduction in service that is greater than 20 percent compared to what their counterpart population lost, then there may be an adverse impact.” The results of this comparison are

shown in *Table 2*. Overall, the routes considered to be receiving a major service change saw a reduction of around one-third of their revenue miles and hours.

For non-minority routes, hours were reduced by 35.7 percent and miles by 29.8 percent while for minority routes, hours were reduced by 33.0 percent and miles by 33.2 percent. The hours reduction for minority routes was less than non-minority routes. The mileage reduction on minority routes was 11.5 percent greater than the mileage reduction on non-minority routes, which is within the 20 percent threshold.

For non-low-income routes, hours were reduced by 24.2 percent and miles by 22.6 percent while for low-income routes, hours were reduced by 33.5 percent and miles by 33.4 percent. The hours reduction on low-income routes was 38.7 percent greater than the hours reduction on non-low-income routes, and the miles reduction on low-income routes was 47.8 percent greater than the miles reduction on non-low-income routes. **Because these values exceed the 20 percent threshold, the service reductions on low-income routes represent a disproportionate burden according to DDOT's policy.**

Table 2: Major Service Change Impacts by Route Classifications

Classification	Weekly Change in Revenue Hours	Weekly Change in Revenue Miles
All Major Service Change Routes	-33.1%	-33.0%
Minority Routes	-33.0%	-33.2%
Non-Minority Routes	-35.7%	-29.8%
Low-Income Routes	-33.5%	-33.4%
Non-Low Income Routes	-24.2%	-22.6%

Step 4: Discussion

As detailed above, the November 2021 service changes do not create a disparate impact on minority populations but do place a disproportionate burden on low-income populations according to DDOT's Title VI policy and equity analysis methodology. However, it is important to note that the non-low-income categorization includes only one route, 9 Jefferson. Therefore, the comparison of the change in hours and miles is between Route 9 and the 29 other routes undergoing a major service change. Route 9's 24.2 percent reduction in revenue hours and 22.6 percent reduction in revenue miles is below the median percent reduction across all the major service change routes, skewing the low-income route comparison.

It is important to note that 9 Jefferson is a ConnectTen route and is the 10th highest ridership route in the network with service levels like other ConnectTen routes. While the reduction to its revenue hours and miles is less than most of the other routes undergoing a major service change, the ConnectTen routes play a vital network role and maintaining frequency on these routes is important for overall service quality and equity for all riders.

Additionally, the November 2021 service changes are an effort to re-orient the scheduled bus service on a temporary basis to match the service levels DDOT is currently providing. Significantly lower ridership and other COVID pandemic challenges preclude DDOT from operating all of the currently scheduled service. An alternative to this service change would be to continue to operate the existing schedule, with many missed trips, until the challenges are overcome and ridership returns. This leaves customers

throughout the system with unpredictable and irregular service and makes transfers between routes more challenging. DDOT intends these service changes to be temporary, with a restoration and improvement of frequency in 2022.

Public Engagement

DDOT held two virtual public meetings on the afternoon of September 1 to share the proposed service changes and accepted public comments through September 15th which were reviewed and incorporated into the plan.

DDOT provided updates to the public about the service changes and opportunities for comment on the agency website and social media platforms. Flyers describing the changes on a route level were printed and distributed to the public at transit facilities ahead of the September 1 hearings. DDOT staff also solicited feedback on the plan from DDOT bus operators, who are very familiar with the transit system and also interact with customers and the public on a daily basis.

Appendix

Table 3: Percent of Route Miles in Minority and Low-Income Block Groups

Route	Percent of Route Miles in Minority Block Groups	Percent of Route Miles in Low-Income Block Groups
1 Vernor	20.2%	63.7%
2 Michigan	34.5%	61.3%
3 Grand River	75.2%	59.7%
4 Woodward	59.7%	50.2%
5 Van Dyke-Lafayette	71.2%	29.7%
6 Gratiot	75.4%	35.6%
7 Seven Mile	96.2%	37.6%
8 Warren	62.6%	61.6%
9 Jefferson	40.8%	19.9%
10 Greenfield	65.7%	37.2%
11 Clairmount	86.6%	54.2%
12 Conant	62.5%	52.0%
13 Conner	76.1%	40.0%
15 Chicago-Davison	100.0%	70.1%
16 Dexter	75.8%	48.8%
17 Eight Mile	59.1%	28.7%
18 Fenkell	80.3%	53.8%
19 Fort	26.3%	52.1%
23 Hamilton	57.7%	53.7%
26 Junction	73.1%	67.2%
27 Joy	73.3%	47.4%
29 Linwood	58.5%	41.0%
30 Livernois	60.5%	41.2%
31 Mack	56.6%	49.1%
32 McNichols	89.1%	43.6%
38 Plymouth	69.9%	39.7%
39 Puritan	96.2%	47.6%
40 Russell	73.5%	55.3%
41 Schaefer	54.5%	40.9%
42 Mid-City Loop	74.2%	65.9%
43 Schoolcraft	91.4%	57.0%
46 Southfield	70.3%	38.3%
47 Tireman	75.9%	58.4%
52 Chene	54.4%	43.5%
54 Wyoming	50.5%	55.2%
60 Evergreen	71.0%	44.9%
67 Cadillac-Harper	80.5%	57.4%

Route	Percent of Route Miles in Minority Block Groups	Percent of Route Miles in Low-Income Block Groups
68 Chalmers	98.4%	39.7%
80 Villages Direct	53.3%	45.3%
89 Southwest District	39.4%	53.1%
92 Rosedale Express	81.5%	48.5%
95 Ryan Express	71.0%	62.9%
96 Joy Express	79.2%	50.1%

Table 4: Minority and Low-Income Population Percent within Half-Mile of Route

Route	Percent Minority within Half Mile	Percent Low-Income Within Half Mile	Major Service Change
1 Vernor	57%	40%	YES
2 Michigan	48%	37%	YES
3 Grand River	87%	34%	YES
4 Woodward	74%	36%	YES
5 Van Dyke/Lafayette	80%	30%	NO
6 Gratiot	84%	27%	YES
7 Seven Mile	94%	28%	YES
8 Warren	62%	38%	NO
9 Jefferson	71%	28%	YES
10 Greenfield	76%	31%	YES
11 Clairmount	89%	39%	YES
12 Conant	74%	40%	YES
13 Conner	94%	34%	YES
15 Chicago/Davison	96%	40%	YES
16 Dexter	88%	32%	YES
17 Eight Mile	81%	25%	NO
18 Fenkell	90%	35%	YES
19 Fort	74%	35%	YES
23 Hamilton/John R	73%	36%	YES
26 Junction	75%	41%	YES
27 Joy Rd	86%	34%	YES
29 Linwood	83%	37%	YES
30 Livernois	84%	29%	YES
31 Mack	66%	30%	YES
32 McNichols	87%	29%	NO
38 Plymouth	79%	35%	YES
39 Puritan	96%	34%	NO
40 Russell	77%	34%	NO
41 Schaefer	64%	34%	NO

Route	Percent Minority within Half Mile	Percent Low-Income Within Half Mile	Major Service Change
42 Mid-City Loop	82%	41%	YES
43 Schoolcraft	92%	34%	YES
46 Southfield	86%	30%	NO
47 Tireman	76%	42%	YES
52 Chene	70%	37%	NO
54 Wyoming	73%	33%	NO
60 Evergreen	88%	32%	NO
67 Cadillac/Harper	82%	34%	YES
68 Chalmers	90%	34%	YES

Note: The percent values shown above were obtained using GIS by creating a 0.5-mile buffer around each route and calculating the total population, minority, and low-income populations.