



Detroit Department of Transportation Service Equity Analysis for Minority and Low-Income Populations

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March 3, 2012 Service Changes

The Detroit Department of Transportation (DDOT) is striving toward the goal of making the service delivered both more efficient and effective, in addition to reducing costs in a time of great fiscal constraint in the City of Detroit. It is of concern when our Department reduces service to riders when there are limited or no alternatives, but we acknowledge that other proposed alternatives could have had worse effects (proposed service change of 25 February 2012). By reviewing data, DDOT has attempted to minimize the impact of the changes however the City's financial condition has necessitated a reduction in service.

To strategically determine which service changes to make, DDOT utilized the Department's Service Standards *DDOT's Web: www.RideDetroitTransit.com* to identify specific times and/or segments of routes considered low performing. DDOT's service standards say that any service that operates at less than 50% system average for two consecutive quarters is subject to elimination. System average was 34.87 passengers per hour in FY11 and DDOT's standard is 33.92.

The March 3, 2012 Service Changes met the standards required to hold a public hearing as set forth in its Service Standards section on *Public Hearing Requirements*, and also contained many changes which constituted Major Changes in the *Service Planning Process* section of this document.

DDOT is in the process of finalizing all Service Equity and Title VI analysis methods in the form of a comprehensive agency policy, which would take effect under the guidance of the previous Circular until the adoption of FTA Proposed Circular 4702.1B. In performing this analysis we drew strongly from precedent in previous Title VI analyses from our agency, including the use of a 5% threshold based on system area total average to measure "disproportionate" affects between minority and low-income riders.

Definition of Major Change

For the purposes of evaluating the data for Title VI, the definition of Major Change is taken from two sections of the Detroit Department of Transportation Service Standards: The *Service Planning Process* and *Public Hearing Requirements*. These sections are included below.

Service Planning Process (Page 55)

Major changes that will have a significant effect on resources and may potentially have a significant affect on riders are as follows:

- Major service restructuring
- Implementation of new routes or services
- Elimination of a route or service
- Elimination of part of a route
- Span of service changes greater than one (1) hour
- 25% or more of the route miles of the number of transit revenue vehicles of a route computed on a daily basis for the day of the week for which the change is made.

Public Hearing Requirements (Pages 13-14)

Public Hearings are required as follows:

- Prior to raising fares or implementing a major reduction of transit services (Federal Transit Act. Section 9 (e) (3) (H).
- If there is a reduction in service of 25% or more of the number of transit route miles of a route; or 25% or more of the number of transit revenue vehicles miles of a route computed on a daily basis for the day of the week for which the change is made.
- When a new transit route is established.
- Before eliminating an existing transit route.
- Prior to any application for a grant or loan under the Federal Transit Act to finance the acquisition, construction, reconstruction, or improvement of facilities or equipment which will substantially affect a community or its mass transportation service, DDOT shall afford an adequate opportunity for a public hearing, pursuant to adequate public notice, and hold such hearing unless no one with a significant economic, social, or environmental interest in the matter requests a hearing. (Federal Transit Act. Section 3 (d) (1).

And as interpreted from the exemptions section (Page 14):

- Headway adjustments exceeding ten (10) minutes during peak hour service, or exceeding twenty (20) minutes during non-peak hour service also constitute Major Changes.

Method to Evaluate Service Changes

DDOT in the past has followed *Option A* of the current FTA Circular 4702.1A to evaluate potential disproportionate and adverse effects on minority and low-income riders. For the March 3rd, 2012 Service Changes the Department has elected *Option B: Locally Developed Evaluation Procedure*. DDOT selected this Option by developing a hybrid method from *Option A* of the current circular, along with *Appendix K: Service and Fare Equity Analysis Questionnaire Checklist* from the FTA Proposed Circular 4702.1B.

There are five key components of the Title VI evaluation that DDOT referenced in determining disproportionate and adverse effects on low-income and minority riders. These are listed and described in detail below.

1. System and Route Evaluation

DDOT broke down by census tract the demographics of every route in our system, and compared the low-income and minority populations to the system average. From this, 77% of DDOT's Service Area Population was determined to be Minority, and similarly 31% determined to be Low-Income. These thresholds were used to divide our Service Area Population into quartiles to represent potential routes for adverse effects in our system. Census tracts containing minority populations greater than 84.6% are in Quartile 4, census tracts with minority populations ranging from 77.3% to 84.6% are Quartile 3. Census tracts containing low-income populations greater than 35.9% are in Quartile 4, populations between 31.1% and 35.9% are Quartile 3.

Of the current routes in place, prior to the March 3rd, 2012 service changes, 55.3% have a high proportion of minorities and 52.6% have high levels of low-income individuals. 31.6% of the routes' service areas are both high minority and low-income populations, while 26.3% of the routes do not exceed system average of either category.

To assist in the explanation of the impacts of route changes on minority and low-income riders, DDOT has produced maps as a visual aid. These maps are produced for Major Route Service Changes of headway adjustments, implementation or elimination of a route or service, or elimination of part of a route. These maps of the route or route segment that will be eliminated, reduced, added or expanded, are overlaid on a demographic map of the service area which highlights those Census Tracts where the total minority and low-income population is greater than the service area average.

DDOT has also produced additional maps that might be useful in determining if a disproportionate impact would occur, such as maps with every route in our system, with breakdowns displaying by minority and low-income data by route and divided into quartiles.

*For maps and further reference please see Appendix A: Maps of Minority and Low Income Population.

2. Determination of Major Changes and Subsequent Effects on Minority/Low-Income Population

DDOT determined which of the changes from the March 3rd Service Change constituted Major Changes according to the agency Service Standards, and which of those routes falling into the Major Change category would have a disproportionately high and adverse effect on minority and low-income riders. A summary of this analysis and descriptive graphs are below.

Weekday Service Changes:

Of the 38 weekday routes that were in operation prior to the March 3, 2012 service changes, 29 routes were found to have Major Changes as defined by the DDOT service standards. Routes 9, 10, 11, 13, 14, 16, 17, 18, 19, 21, 23, 25, 27, 29, 30, 34, 36, 38, 39, 41, 43, 45, 46, 47, 48, 49, 53, and 54 fall into the Major Change category due to span of service being decreased by more than 1 hour throughout the day. Route 47 and 49 also constitute Major Change due to the fact that their routes have been partially eliminated. Lastly, Route 78 Imperial Limited was eliminated entirely and therefore is in the Major Change category.

Routes 16, 21, 39, 45, 46, and 78 experience Major Change and had service areas with high levels of minorities. Route 14, 19, 38, 47, and 49 will undergo Major Change and have a disproportionately high low-income population compared to the total system. Routes 9, 11, 13, 18, 23, 29, 34, 36, 48, and 53 fall into the Major Change category and have both high levels of minorities and low-income individuals. Lastly, Routes 17, 25, 27, 30, 41, 43, and 54 will experience Major Change but do not serve either low-income or high minority population areas.

Saturday Service Changes:

35 DDOT routes currently operate on Saturdays. 22 routes, or 62.8%, will experience Major Change after the March 3rd, 2012 service changes are enacted; these include routes 11, 12, 14, 15, 16, 18, 19, 21, 23, 25, 27, 31, 34, 39, 43, 45, 46, 47, 48, 53, and 54. Clairmount, Route 11, will be eliminated entirely while routes 47 Tireman and 49 Vernor will experience partial route elimination. The remainder of the above routes, including 47 and 49, will experience service changes greater than a 1-hour span.

Sunday Service Changes:

Prior to March 3rd, 2012, 34 DDOT routes operate on Sundays. 14 routes, or 41.2%, will experience Major Change after the March 3rd, 2012 service changes are enacted; these include routes 11, 12, 14, 16, 19, 21, 25, 34, 45, 46, 48, 49, 53, and 54. Route 11 Clairmount and Route 46 Southfield was eliminated entirely while routes 47 Tireman and 49 Vernor will experience partial route elimination. The remainder of the above routes, including 47 and 49, will experience service changes greater than a 1-hour span.

Summary:

Of the 38 DDOT routes prior to the March 3rd, 2012 service changes, only routes 7, 22, 37, 40, and 60 did not experience Major Change at any point in the service changes which became effective March 3, 2012.

Major Changes: Weekday Service

Route	Major Change Y/N	Type of Major Change	Description of Change	Minority Rte	Low-Income Rte	
7	Cadillac-Harper	N	-	-	4	4
9	Chalmers	Y	span svc decrease	2hrs removed end of rte	3	4
10	Chene	Y	span svc decrease	2hrs removed end of rte	-	4
11	Clairmount	Y	span svc decrease	3hrs removed end of rte	3	4
12	Conant	N	-	-	-	4
13	Conner	Y	span svc decrease	2hrs removed end of rte	4	4
14	Crosstown	Y	span svc decrease	5hrs removed end of rte	-	3
15	Chicago-Davison	N	-	-	4	4
16	Dexter	Y	span svc decrease	4hrs removed end of rte	4	-
17	Eight Mile	Y	span svc decrease	3hrs removed end of rte	-	-
18	Fenkell	Y	span svc decrease	3hrs removed end of rte	4	3
19	Fort	Y	span svc decrease	5hrs removed end of rte	-	3
21	Grand River	Y	span svc decrease	4hrs removed end of rte	3	-
22	Greenfield	N	-	-	-	-
23	Hamilton	Y	span svc decrease	2hrs removed end of rte	3	3
25	Jefferson	Y	span svc decrease	4hrs removed end of rte	-	-
27	Joy	Y	span svc decrease	1hr removed end of rte; 1hr removed beg of rte	-	-
29	Linwood	Y	span svc decrease	2hrs removed end of rte	4	3
30	Livernois	Y	span svc decrease	2hrs removed end of rte; 1hr removed beg of rte	-	-
31	Mack	N	-	-	-	-
32	McNichols	N	-	-	4	-
34	Gratiot	Y	span svc decrease	4hrs removed end of rte	3	3
36	Oakland	Y	span svc decrease	3hrs removed throughout	3	3
37	Michigan	N	-	-	-	-
38	Plymouth	Y	span svc decrease	1hr 20min removed end of rte	-	3
39	Puritan	Y	span svc decrease	2hrs removed end of rte	4	-
40	Russell	N	-	-	3	4
41	Schaefer	Y	span svc decrease	2hrs removed end of rte	-	-
43	Schoolcraft	Y	span svc decrease	2hrs 30min removed end of rte	-	-
45	Seven Mile	Y	span svc decrease	5hrs removed end of rte	4	-
46	Southfield	Y	span svc decrease	4hrs removed daytime off-pk; 2hrs removed end of rte	3	-
47	Tireman	Y	partial elimination; span svc decrease	10am-2pm partial elimination; 1hr 40min removed end of rte	-	3
48	Van Dyke-Lafayette	Y	span svc decrease	4hrs 30min removed end of rte	4	3
49	Vernor	Y	partial elimination; span svc decrease	eastern half of rte eliminated all day; 3hrs 20min removed end of rte	-	4
53	Woodward	Y	span svc decrease	4hrs removed end of rte	3	4
54	Wyoming	Y	span svc decrease	2hrs removed end of rte	-	-
60	Evergreen	N	-	-	3	-
78	Imperial Limited	Y	route elimination	total rte elimination	4	-

*Bolded Routes indicate 24hr service prior to March 3rd Service Changes

**Description of change based calculations on beginning of route time point, not based on last time point of service

***Routes highlighted in yellow indicate Major Change as defined by DDOT Service Standards

****Determination of Minority or Low-Income route is based on System Wide population compared to Route Average population (by census tract) divided into quartiles; "3" indicates the 3rd Quartile, "4" indicates 4th Quartile

Major Changes: Saturday Service

Route	Major Change Y/N	Type of Major Change	Description of Change	Minority Rte	Low-Income Rte
7 Cadillac-Harper	N	-	-	4	4
9 Chalmers	N	-	-	3	4
10 Chene	N	-	-	-	4
11 Clairmount	Y	route elimination	total rte elimination	3	4
12 Conant	Y	span svc decrease	1hr 50min removed end of rte	-	4
13 Conner	N	-	-	4	4
14 Crosstown	Y	span svc decrease	5hrs removed end of rte	-	3
15 Chicago-Davison	Y	span svc decrease	2hrs removed end of rte	4	4
16 Dexter	Y	span svc decrease	5hrs removed end of rte	4	-
17 Eight Mile	N	-	-	-	-
18 Fenkell	Y	span svc decrease	2hrs removed end of rte	4	3
19 Fort	Y	span svc decrease	6hrs removed end of rte	-	3
21 Grand River	Y	span svc decrease	4hrs removed end of rte	3	-
22 Greenfield	N	-	-	-	-
23 Hamilton	Y	span svc decrease	1hr removed end of rte; 1hr removed beg of rte	3	3
25 Jefferson	Y	span svc decrease	5hrs removed end of rte	-	-
27 Joy	Y	span svc decrease	1hr removed end of rte; 1hr removed beg of rte	-	-
29 Linwood	N	-	-	4	3
30 Livernois	N	-	-	-	-
31 Mack	Y	span svc decrease	2hrs removed end of rte	-	-
32 McNichols	N	-	-	4	-
34 Gratiot	Y	span svc decrease	4hrs 40min removed end of rte	3	3
37 Michigan	N	-	-	-	-
38 Plymouth	N	-	-	-	3
39 Puritan	Y	span svc decrease	1hr removed beg of rte; 2hrs removed end of rte	4	-
41 Schaefer	N	-	-	-	-
43 Schoolcraft	Y	span svc decrease	2hrs 30min removed end of rte	-	-
45 Seven Mile	Y	span svc decrease	5hrs removed end of rte	4	-
46 Southfield	Y	span svc decrease	5hrs removed daytime; 1hr removed end of rte	3	-
47 Tireman	Y	partial elimination; span svc decrease	10am-2pm partial elimination; 1hr 30min removed beg of rte; 3hrs removed end of rte	-	3
48 Van Dyke-Lafayette	Y	span svc decrease	5hrs removed end of rte	4	3
49 Vernor	Y	partial elimination; span svc decrease	eastern half of rte eliminated all day; 3hrs removed end of rte	-	4
53 Woodward	Y	span svc decrease	4hrs removed end of rte	3	4
54 Wyoming	Y	span svc decrease	1hr removed beg of rte; 1hr removed end of rte	-	-
60 Evergreen	N	-	-	3	-

*Bolded Routes indicate 24hr service prior to March 3rd Service Changes

**Description of change based calculations on beginning of route time point, not based on last time point of service

***Routes highlighted in yellow indicate Major Change as defined by DDOT Service Standards

****Determination of Minority or Low-Income route is based on System Wide population compared to Route Average population (by census tract) divided into quartiles; "3" indicates the 3rd Quartile, "4" indicates 4th Quartile

Major Changes: Sunday Service

Route	Major Change Y/N	Type of Major Change	Description of Change	Minority Rte	Low-Income Rte
7 Cadillac-Harper	N	-	-	4	4
9 Chalmers	N	-	-	3	4
10 Chene	N	-	-	-	4
11 Clairmount	Y	route elimination	total rte elimination	3	4
12 Conant	Y	span svc decrease	1hr removed from beg of rte; 1hr removed end of rte	-	4
13 Conner	N	-	-	4	4
14 Crosstown	Y	span svc decrease	4hrs 30min removed end of rte	-	3
15 Chicago-Davison	N	-	-	4	4
16 Dexter	Y	span svc decrease	5hrs 30min removed end of rte	4	-
17 Eight Mile	N	-	-	-	-
18 Fenkell	N	-	-	4	3
19 Fort	Y	span svc decrease	7hrs removed end of rte	-	3
21 Grand River	Y	span svc decrease	4hrs removed end of rte	3	-
22 Greenfield	N	-	-	-	-
23 Hamilton	N	-	-	3	3
25 Jefferson	Y	span svc decrease	5hrs removed end of rte	-	-
27 Joy	N	-	-	-	-
29 Linwood	N	-	-	4	3
30 Livernois	N	-	-	-	-
31 Mack	N	-	-	-	-
32 McNichols	N	-	-	4	-
34 Gratiot	Y	span svc decrease	4hrs removed end of rte	3	3
37 Michigan	N	-	-	-	-
38 Plymouth	N	-	-	-	3
39 Puritan	N	-	-	4	-
41 Schaefer	N	-	-	-	-
43 Schoolcraft	N	-	-	-	-
45 Seven Mile	Y	span svc decrease	5hrs removed end of rte	4	-
46 Southfield	Y	route elimination	total rte elimination	3	-
48 Van Dyke-Lafayette	Y	span svc decrease	5hrs removed end of rte	4	3
49 Vernor	Y	partial elimination	eastern half of rte eliminated all day	-	4
53 Woodward	Y	span svc decrease	4hrs removed end of rte	3	4
54 Wyoming	Y	span svc decrease	1hr removed beg of rte; 1hr removed end of rte	-	-
60 Evergreen	N	-	-	3	-

*Bolded Routes indicate 24hr service prior to March 3rd Service Changes

**Description of change based calculations on beginning of route time point, not based on last time point of service

***Routes highlighted in yellow indicate Major Change as defined by DDOT Service Standards

****Determination of Minority or Low-Income route is based on System Wide population compared to Route Average population (by census tract) divided into quartiles; "3" indicates the 3rd Quartile, "4" indicates 4th Quartile

3. Span of Service and Headway Comparison

To perform the Span of Service analysis, DDOT took the average span of service for weekdays, Saturdays and Sundays and compared the percentage difference between existing service and service changes effective March 3, 2012 for minority and low-income routes. The results show that by far the largest impacts to minority routes occur on Sunday service, with changes affecting minority span of service 4.8% more than non-minority; the largest impacts to low-income routes occur during weekday service, with changes affecting low-income routes 4.2% more than those not considered low-income routes. See Reports of Span of Service, below.

However, as these impacts are not greater than a 5% threshold, DDOT has determined they are not significant enough to mitigate effects on this basis. The 5% threshold is based on system area total average to measure “disproportionate” affects between minority and low-income riders. To determine disproportionate effects of span of service to minority and low-income population, DDOT used available data, APC and section 15 trips to determine at the trip level the greater or lesser likelihood of minorities and low-income riders to use service during the affected days and times of day. DDOT did not have current survey data as additional support.

Report of Span of Service Changes Minority Routes

Average Span of Service (hh:mm)	Existing		March 3rd, 2012		Absolute Change (Hour:minute)			Percentage Change		
	Minority Routes	Non-Minority Routes	Minority Routes	Non-Minority Routes	Minority Routes	Non-Minority Routes	Difference	Minority Routes	Non-Minority Routes	Difference
Weekday	19:09	19:25	17:25	17:34	1:43	1:50	0:07	9.0%	9.5%	0.5%
Saturday	19:08	17:40	16:51	15:38	2:16	2:01	0:14	11.9%	11.5%	0.4%
Sunday	16:27	15:01	14:21	13:49	2:05	1:11	0:54	12.7%	8.0%	4.8%

Report of Span of Service Changes Low-Income Routes

Average Span of Service (hh:mm)	Existing		March 3rd, 2012		Absolute Change (Hour:minute)			Percentage Change		
	Low Income Routes	Not - Low Income Routes	Low Income Routes	Not - Low Income Routes	Minority Routes	Non-Minority Routes	Difference	Minority Routes	Non-Minority Routes	Difference
Weekday	19:14	19:19	17:05	17:58	2:09	1:20	0:48	11.2%	7.0%	4.2%
Saturday	17:59	18:49	16:07	16:22	1:51	2:26	0:34	10.4%	12.9%	2.6%
Sunday	16:06	15:24	14:29	14:16	1:36	1:07	0:28	10.0%	7.3%	2.6%

To perform the Headway Comparison, DDOT took the average headway in minutes for Weekday Peak, Weekday Midday, Weekday Night and Saturday and Sunday service, and compared the percentage difference between existing headways and those from service changes effective March 3, 2012 for minority and low-income routes. The results show that by far the largest impacts to minority routes, and only disproportionate impact, are for changes to Saturday service, with changes adversely affecting minority route average headways 6.5% more than non-minority.

This finding does show disproportionate and adverse effects as a result of the March 3, 2012 changes.

The most significant impact to low-income routes occur during Weekday Peak service, with changes to headways affecting low-income routes -6.3% more than routes which are not low-income. See Reports of Headway Changes, below.

Report of Headway Changes for Minority Routes

Average Headway (Minutes)	Existing September 2011		Proposed March 2012		Absolute Change (Hour:minute)			Percentage Change		
	Minority Routes	Non-Minority Routes	Minority Routes	Non-Minority Routes	Minority Routes	Non-Minority Routes	Diff	Minority Routes	Non-Minority Routes	Difference
							Minority minus Non-Minority			
Weekday Peak	27.5	31.7	26.9	30.3	0.6	1.5	-0.9	2.1%	4.6%	-2.5%
Weekday Midday	31.6	34.9	31.1	35.8	0.5	0.9	-0.5	1.5%	2.7%	-1.2%
Weekday Night	43.6	42.7	38.3	44.6	5.3	1.8	3.4	12.1%	4.3%	7.8%
Saturday	38.9	49.5	41.5	50.1	2.5	0.5	2.0	6.5%	1.1%	5.4%
Sunday	46.8	50.1	47.5	52.4	0.7	2.3	-1.5	1.6%	4.5%	-2.9%

Report of Headway Changes for Low Income

Average Headway (Minutes)	Existing September 2011		Proposed March 2012		Absolute Change (Hour:minute)			Percentage Change		
	Low Income Routes	Non-Low Inc Routes	Low Income Routes	Non-Low Inc Routes	Low Income Routes	Non-Low Inc Routes	Difference	Low Income Routes	Non-Low Inc Routes	Difference
							Low Inc minus Non-Low Inc			
Weekday Peak	31.8	26.7	31.6	24.8	0.3	1.9	-1.6	0.8%	7.1%	-6.3%
Weekday Midday	35.1	30.9	36.5	29.7	1.4	1.3	0.2	4.0%	4.1%	0.0%
Weekday Night	42.6	43.8	40.9	41.7	1.7	2.0	-0.4	4.0%	4.7%	-0.7%
Saturday	47.4	40.7	48.7	42.8	1.3	2.1	-0.8	2.8%	5.2%	-2.5%
Sunday	50.6	46.1	52.2	47.7	1.6	1.6	0.0	3.2%	3.5%	0.4%

4. Availability of Alternate Routes

To assess the alternate routes available, DDOT analyzed the routes to determine if in the census tract an alternate route is available that is operating during the affected major change. For frequency changes, an alternate is considered available if it operates more frequently than the changed route. See Major Change Tables, below.

Weekday Routes with Major Changes and Alternate Routes

Route		Alternate Route	Minority Rte	Low-Income Rte
9	Chalmers	Traveling southbound: Board #45 Seven Mile or 34 Gratiot to #14 Crosstown. traveling northbound: Board #14 Crosstown and transfer to 34 Gratiot or #45 Seven Mile.	3	4
10	Chene	Traveling southbound: Board #45 Seven Mile or #32 McNichols and transfer to #34 Gratiot or #48 Van Dyke. Traveling northbound: Board #34 Gratiot or #48 Van Dyke and transfer to #45 Seven Mile or #32 McNichol	-	4
11	Clairmount	Traveling westbound (#11 Clairmount): Board any route traveling to Rosa Parks Transit Center (RPTC) and transfer to #19 Fort, #49 Vernor, #37 Michigan or #14 Crosstown. Traveling eastbound: Board #19 Fort, #49 Vernor, #37 Michigan to RPTC and transfer to #14 Crosstown or #45 Seven Mile	3	4
13	Conner	Traveling northbound or southbound: Board #48 Van Dyke.	4	4
14	Crosstown	For #14 Crosstown, there are no suggested alternate routes. Bus service resumes at 4:04 a.m.	-	3
16	Dexter	For #16 Dexter, there are no suggested alternate routes. Bus service resumes at 3:56 a.m	4	-
18	Fenkell	Traveling northbound and southbound: Board #21 Grand River	4	3
19	Fort	For #19 Fort, there are no suggested alternate routes. Bus service resumes at 4:00 a.m.	-	3
21	Grand River	For #21 Grand River, there are no suggested alternate routes. Bus service resumes at 4:00 a.m.	3	-
23	Hamilton	Traveling northbound and southbound: Board #53 Woodward	3	3
29	Linwood	Traveling northbound or southbound: Board #16 Dexter	4	3
30	Livernois	Traveling northbound: Board #19 Fort and transfer to #21 Grand River or #16 Dexter. Traveling southbound: Board #16 Eight Mile, #32 McNichols or #45 Seven Mile and transfer to #53 Woodward to #19 Fort.	-	-
34	Gratiot	For #34 Gratiot, there are no suggested alternate routes. Bus service resumes at 3:58 a.m.	3	3
36	Oakland	Traveling northbound or southbound: Board #53 Woodward	3	3
38	Plymouth	For #38 Plymouth, there are no suggested alternative routes.	-	3
39	Puritan	Traveling eastbound or westbound: Board #32 McNichols or #18 Fenkell	4	-
45	Seven Mile	For #45 Seven Mile, there are no suggested routes. Bus service resumes at 4:10 a.m.	4	-
46	Southfield	Traveling northbound or southbound: Board #22 Greenfield or #60 Evergreen	3	-
47	Tireman	Traveling eastbound: Board #21 Grand River, #27 Joy Road or #16 Dexter Traveling westbound: Board #21 Grand River. #27 Joy Road or #16 Dexter and transfer to #47 Tireman.	-	3
48	Van Dyke-Lafayette	For #48 Van Dyke, there are no suggested alternate routes. Bus service resumes at 4:30 a.m.	4	3
49	Vernor	For #49 Vernor, there are no suggested alternate routes.	-	4
53	Woodward	For #53 Woodward, there are no suggested alternate routes. Bus service resumes at 3:55 a.m.	3	4
78	Imperial Limited	For #78 imperial Limited, there are no suggested alternate routes.	4	-

*Bolted Routes indicate 24hr service prior to March 3rd Service Changes

**Description of change based calculations on beginning of route timepoint, not based on last timepoint of service

***Routes highlighted in yellow indicate Major Change as defined by DDOT Service Standards

****Determination of Minority or Low-Income route is based on System Wide population compared to Route Average population (by census tract) divided into quartiles; "3" indicates the 3rd Quartile, "4" indicates 4th Quartile

Saturday Routes with Major Changes and Alternate Routes

Route	Alternate Route	Minority Rte	Low-Income Rte
11	Clairmount Traveling eastbound: Transfer at RPTC and board #19 Fort, # 49 Vernor or #37 Michigan Traveling westbound: Transfer at RPTC and board #7 Cadillac- Harper, #31 Mack, #34 Gratiot, #48 Van Dyke or #53 Woodward	3	4
12	Conant Traveling northbound or southbound: Board #48 Van Dyke	-	4
14	Crosstown For #14 Crosstown, there are no suggested alternate routes. Bus service resumes at 4:20 a.m.	-	3
15	Chicago-Davison For #15 Chicago-Davison, there are no suggested alternate routes.	4	4
16	Dexter For #16 Dexter, there are no suggested alternate routes. Bus service resumes at 4:20 a.m.	4	-
18	Fenkell For #18 Fenkell, there are no suggested alternate routes.	4	3
19	Fort For #19 Fort, there are no suggested alternate routes. Bus service resumes at 5:00 a.m.	-	3
21	Grand River For #21 Grand River, there are no suggested alternate routes. Bus service resumes at 4:00 a.m.	3	-
23	Hamilton Traveling northbound or southbound: Board #53 Woodward and #45 Seven Mile.	3	3
25	Jefferson For #25 Jefferson, there are no suggested alternate routes. Bus service resumes at 4:00 a.m.	-	-
27	Joy For #27 Joy, there are no suggested alternate routes.	-	-
31	Mack Traveling eastbound or westbound: Board #14 Crosstown or #34 Gratiot.	-	-
34	Gratiot For #34 Gratiot, there are no suggested alternate routes. Bus service resumes at 4:20 a.m.	3	3
39	Puritan Traveling eastbound or westbound: Board #15 Chicago-Davison, #43 Schoolcraft or #32 McNichols.	4	-
43	Schoolcraft Traveling eastbound or westbound: Board #15 Chicago-Davison, #18 Fenkell or #32 McNichols.	-	-
45	Seven Mile For #45 Seven Mile, there are no suggested alternate routes. Bus service resumes at 4:00 a.m.	4	-
46	Southfield Traveling northbound or southbound: Board #22 Greenfield or #60 Evergreen.	3	-
47	Tireman Traveling eastbound: Board #21 Grand River, #27 Joy Road or #16 Dexter Traveling westbound: Board #21 Grand River, #27 Joy Road or #16 Dexter and transfer to #47 Tireman.	-	3
48	Van Dyke-Lafayette For #48 Van Dyke, there are no suggested alternate routes. Bus service resumes at 5:00 a.m.	4	3
49	Vernor Traveling eastbound: Board #31 Mack, #34 Gratiot or #48 Van Dyke to RPTC and transfer to #49 Vernor Traveling westbound: Board #49 Vernor to RPTC and transfer to #31 Mack, #34 Gratiot or #48 Van Dyke	-	4
53	Woodward For #53 Woodward, there are no suggested alternate routes. Bus service resumes at 4:20 a.m.	3	4
54	Wyoming Traveling northbound: Board #19 Fort or #37 Michigan to RPTC and transfer to #21 Grand River or #16 Dexter Traveling southbound: Board #21 Grand River, #16 Dexter or #18 Fenkell to RPTC and transfer to #19 Fort or #37 Michigan	-	-

*Bolted Routes indicate 24hr service prior to March 3rd Service Changes

**Description of change based calculations on beginning of route timepoint, not based on last timepoint of service

***Routes highlighted in yellow indicate Major Change as defined by DDOT Service Standards

****Determination of Minority or Low-Income route is based on System Wide population compared to Route Average population (by census tract) divided into quartiles; "3" indicates the 3rd Quartile, "4" indicates 4th Quartile

Sunday Routes with Major Changes and Alternate Routes

Route		Alternate Route	Minority Rte	Low-Income Rte
11	Clairmount	Traveling eastbound: Transfer at RPTC and board #19 Fort, # 49 Vernor or #37 Michigan Traveling westbound: Transfer at RPTC and board #7 Cadillac-Harper, #31 Mack, #34 Gratiot, #48 Van Dyke or #53 Woodward	3	4
12	Conant	Traveling northbound or southbound: Board #48 Van Dyke	-	4
14	Crosstown	For #14 Crosstown, there are no suggested alternate routes. Bus service resumes at 4:40 a.m.	-	3
16	Dexter	For #16 Dexter, there are no suggested alternate routes. Bus service resumes at 4:30 a.m.	4	-
19	Fort	For #19 Fort, there are no suggested alternate routes. Bus service resumes at 4:00 a.m.	-	3
21	Grand River	For #21 Grand River, there are no suggested alternate routes. Bus service resumes at 4:00 a.m.	3	-
25	Jefferson	For #25 Jefferson, there are no suggested alternate routes. Bus service resumes at 5:00 a.m.	-	-
34	Gratiot	For #34 Gratiot, there are no suggested alternate routes. Bus service resumes at 4:00 a.m.	3	3
45	Seven Mile	For #45 Seven Mile, there are no suggested alternate routes. Bus service resumes at 4:29 a.m.	4	-
48	Van Dyke-Lafayette	For #48 Van Dyke, there are no suggested alternate routes. Bus service resumes at 5:14 a.m.	4	3
49	Vernor	Traveling eastbound: Board #31 Mack, #34 Gratiot or #48 Van Dyke to RPTC and transfer to #49 Vernor. Traveling westbound: Board #49 Vernor to RPTC and transfer to #31 Mack, #34 Gratiot or #48 Van Dyke.	-	4
53	Woodward	For #53 Woodward, there are no suggested alternate routes. Bus service resumes at 4:00 a.m.	3	4
54	Wyoming	Traveling northbound: Board #19 Fort or #37 Michigan to RPTC and transfer to #21 Grand River or #16 Dexter Traveling southbound: Board #21 Grand River, #16 Dexter or #18 Fenkell to RPTC and transfer to #19 Fort or #37 Michigan	-	-

*Bolded Routes indicate 24hr service prior to March 3rd Service Changes

**Description of change based calculations on beginning of route timepoint, not based on last timepoint of service

***Routes highlighted in yellow indicate Major Change as defined by DDOT Service Standards

****Determination of Minority or Low-Income route is based on System Wide population compared to Route Average population (by census tract) divided into quartiles; "3" indicates the 3rd Quartile, "4" indicates 4th Quartile

5. Actions to Minimize, Mitigate, or Offset Adverse Effects

The Federal Transit Administration specifies that changes which are shown to have disproportionate and adverse effects may be enacted if other alternatives would have more severe adverse effects than the preferred alternative. DDOT analyzed internally a number of potential service reductions prior to the March 3, 2012 Service Changes, which would have included the elimination of the following routes:

12 Conant
36 Oakland (combine with 40 Russell
39 Puritan
47 Tireman
78 Imperial Limited

Background for February 25, 2012 Proposed Service Changes

The Detroit Department of Transportation (DDOT) is striving toward the goal of making the service delivered both more efficient and effective, in addition to reducing costs in a time of great fiscal constraint. The City's financial condition has necessitated a reduction in service.

To strategically determine which service changes to make, DDOT utilized the Department's Service Standards to identify specific times and /or segments of routes considered low performing. DDOT's service standards say that any service that operates at less than 50% system average for two consecutive quarters is subject to elimination. System average was 34.87 Passenger per hour in FY11 and DDOT's standard is 33.92.

The February 25, 2012 Service Changes met the standards required to hold a public hearing as set forth in its Service Standards section on Public Hearing Requirements, and also contained many changes which constituted Major Changes in the Service planning Process section of this document.

The Federal Transit Administration specifies that changes which are shown to have disproportionate and adverse effects may be enacted if other alternatives would have more severe adverse effects than the preferred alternative.

The February 25, 2012 proposed service changes were the changes to be presented at a public hearing in January 2012, before Detroit Department of Transportation changed their management priorities. At that time March and April of 2012 became the alternative plans. The February plan consisted of as follows:

1. The elimination of 24 hour service on 9 routes Monday – Saturday;(14 Crosstown, 16 Dexter, 19 Fort Street, 21 Grand River, 25 Jefferson, 34 Gratiot, 45 Seven Mile, 48 Van Dyke, and 53 Woodward).
2. Elimination all service on 5 Routes. (12 Conant, 36 Oakland, 39 Puritan, 47 Tireman and 78 Imperial Limited).
3. Route Change on 4 Routes. (11 Clairmount, 36 Oakland and 40 Russell Combined, 49 Vernor, and 54 Wyoming)
4. Eliminate Saturday Service after 7 PM.
5. Total elimination of Sunday Service.

Span of Service and Headway Comparison (February 2012 – Alternate 1)

The method used to calculate the Span of Service and Headway Comparison is the same as the March 3rd, 2012 Changes. This finding does show disproportionate and adverse effects as a result of the February 2012 – Alternate 1 changes. The most significant impact to low-income routes occur during Saturday service, with changes to headways affecting low-income routes - 5.4% more than routes which are not low-income. See Reports of Span of Service and Headway Changes, below.

Summary: As this proposal would have represented an extreme reduction in service, DDOT is justifying the adverse effects of the March 3, 2012 changes on the basis that the entire elimination of five routes; route change on four routes; Saturday Service after 7 PM and total elimination of Sunday Service would have had a more severe and adverse effect on minority and low-income riders. This justification is based on the comments that DDOT has received from previous public hearings held to discuss similar DDOT planned adjustments.

Report of Proposed Span of Service Changes for MINORITY

Average Span of Service (hh:mm)	Existing September 2011		Proposed Alternate 1		Absolute Change (Hour:minute)			Percentage Change		
	Minority Routes	Non-Minority Routes	Minority Routes	Non-Minority Routes	Minority Routes	Non-Minority Routes	Difference	Minority Routes	Non-Minority Routes	Difference
							Minority minus Non-Minority			Minority minus Non-Minority
Weekday	19:09	19:25	18:19	17:40	0:50	1:45	0:55	4.4%	9.0%	4.7%
Saturday	19:09	19:25	16:27	15:39	2:41	3:45	1:03	14.1%	19.3%	5.3%
Sunday	16:27	15:01	0	0	16:27	15:01	1:26	100.0%	100.0%	0.0%

Report of Proposed Span of Service Changes for LOW INCOME

Average Span of Service (hh:mm)	Existing September 2011		Proposed Alternate 1		Absolute Change (Hour:minute)			Percentage Change		
	Low Income Routes	Non-Low Inc Routes	Low Income Routes	Non-Low Inc Routes	Low Income Routes	Non-Low Inc Routes	Difference	Low Income Routes	Non-Low Inc Routes	Difference
							Low Inc minus Non-Low Inc			Low Inc minus Non-Low Inc
Weekday	19:14	19:19	18:02	17:58	1:12	1:21	0:09	6.2%	7.0%	0.7%
Saturday	17:59	18:49	15:58	16:11	2:00	2:37	0:36	11.2%	13.9%	2.8%
Sunday	16:06	15:24	0	0	16:06	15:24	0:42	100.0%	100.0%	0.0%

Report of Proposed Headway Changes for MINORITY

Average Headway (Minutes)	Schedule Period September 2011		Proposed Alternate 1		Absolute Change (minutes)			Percentage Change		
	Minority Routes	Non-Minority Routes	Minority Routes	Non-Minority Routes	Minority Routes	Non-Minority Routes	Difference	Minority Routes	Non-Minority Routes	Difference
							Minority minus Non-Minority			Minority minus Non-Minority
Weekday Peak	31.8	26.7	22.7	30.6	9.1	3.9	5.2	28.5%	14.6%	13.9%
Wkday Midday	35.1	30.9	28.8	34.2	6.3	3.3	3.1	18.1%	10.5%	7.5%
Wkday Night	42.6	43.8	43.3	42.3	0.7	1.5	-0.8	1.6%	3.3%	-1.7%
Saturday	38.9	49.5	37.6	48.4	1.3	1.2	0.1	3.4%	2.4%	1.0%
Sunday	46.8	50.1	0	0	46.8	50.1	3.4	100.0%	100.0%	0.0%

Report of Proposed Headway Changes for LOW INCOME

Average Headway (Minutes)	Schedule Period September 2011		Proposed Alternate 1		Absolute Change (minutes)			Percentage Change		
	Low Income Routes	Non-Low Inc Routes	Low Income Routes	Non-Low Inc Routes	Low Income Routes	Non-Low Inc Routes	Difference	Low Income Routes	Non-Low Inc Routes	Difference
							Low Inc minus Non-Low Inc			Low Inc minus Non-Low Inc
Weekday Peak	31.8	26.7	26.6	26.3	5.2	0.4	4.8	16.5%	1.5%	14.9%
Wkday Midday	35.1	30.9	32.3	30.4	2.9	0.6	2.3	8.1%	1.8%	6.3%
Wkday Night	42.6	43.8	42.1	43.5	0.5	0.3	0.2	1.1%	0.7%	0.4%
Saturday	47.4	40.7	46.8	37.9	0.6	2.8	-2.1	1.3%	6.8%	-5.4%
Sunday	50.6	46.1	0.0	0.0	50.6	46.1	4.5	100.0%	100.0%	0.0%

Appendices:

Appendix A:
Maps of Minority and Low Income Population

Appendix B:
Title VI Quartile Listing by Route; Weekday, Saturday & Sunday Headway & Span of Service Changes for Minority and Low Income Routes by Quartile

Appendix C:
June & September 2011 Weekday, Saturday & Sunday Passengers Per Revenue Hour & Trip

Appendix D:
Maps of February 2012 – Alternate 1