Loudoun County Transit
Title VI Service Equity Report
Fiscal Year 2020 Service Changes for Implementation Fall 2019

June 20, 2019

Prepared by:
Loudoun County Department of Transportation and Capital Infrastructure
## Contents

Executive Summary ................................................................................................................................... v

Board of Supervisors’ Approval of Service Equity Analysis ............................................................. vi

Introduction ............................................................................................................................................... 1

Background Information ....................................................................................................................... 1

Loudoun County Transit Title VI Policies ............................................................................................... 2

  Major Service Change Policy ........................................................................................................... 3

  Disparate Impact Policy ................................................................................................................... 3

  Disproportionate Burden Policy ...................................................................................................... 3

Public Engagement and Board of Supervisors’ Approval of Policies ....................................................... 4

Proposed FY 2020 Service Changes ........................................................................................................... 7

  Determination of Major Service Change ......................................................................................... 8

  Route Descriptions for Recommended Major Service Changes ...................................................... 11

      Premium Long-Haul Commuter Bus Routes .............................................................................. 12

Service Equity Analysis for Major Service Changes ................................................................................. 15

  Analytical Framework ..................................................................................................................... 15

      Datasets and Techniques Used in Analysis ............................................................................... 15

      Analytical Methodology .......................................................................................................... 16

Service Area Demographics ................................................................................................................ 17

      Premium Long-Haul Commuter Bus ......................................................................................... 17

Summary of Service Changes – Premium Long-Haul Commuter Bus .................................................. 18

      Adverse Service Changes ....................................................................................................... 18

      Service Improvements ............................................................................................................ 19

Overlay Maps with Service Changes and Demographic Data ............................................................... 20
Executive Summary

The Federal Transit Administration (FTA) requires that all transit providers who operate 50 or more fixed route vehicles in peak service and provide service in an urbanized area of 200,000 or more people, to conduct a Title VI equity analysis prior to implementing fare changes or major service changes. The Federal statute for Title VI provides that “no person 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.” Additionally, the FTA requires the integration of environmental justice principles into the recipient’s public transportation decision-making process. Loudoun County is a recipient of FTA funds, in the form of a Transportation Infrastructure Finance and Innovation Act (TIFIA) loan for Metrorail expansion, and meets the thresholds for population and peak service operations.

Loudoun County Government is committed to providing high quality service to the public and holds among its values – treating all people equally and without prejudice. Loudoun County Transit is managed by the County’s Department of Transportation and Capital Infrastructure (DTCI). When planning for Major Service Changes, DTCI must consider potential adverse effects. The Disparate Impact and Disproportionate Burden Policies adopted by Loudoun County establish statistical thresholds for comparing the impacts borne by minority populations and low-income households to those within the service area overall. These policies, which can be found starting on Page 2, were developed through a public decision-making process and were approved by the Board of Supervisors on June 7, 2016. Through conscientious evaluation, DTCI’s program goal is to avoid, minimize or mitigate adverse impacts where practicable.

In accordance with FTA requirements and Loudoun County’s 2017-2020 Title VI Program for transit services, DTCI evaluated the twenty-seven (27) Commuter Bus routes that are recommended to be modified, eliminated, or added to determine if the change qualified as a Major Service Change. Any change in service that adds or eliminates more than 25% of the route’s weekly revenue miles or more than 25% of the route’s weekly revenue hours is considered a Major Service Change. Out of the 27 route changes evaluated, ten qualified as a Major Service Change and were analyzed for disparate impact and disproportionate burden.

To determine whether this package of changes complies with Loudoun County Transit’s Title VI policies, aggregated percentages of minority and low-income populations were determined for all adverse changes and for all service improvements that were classified as Major Service Changes to the Premium Long-Haul Commuter Bus Service. Overall, using the Major Service Change, Disparate Impact and Disproportionate Burden Policies, DTCI concluded that the planned service changes for Fiscal Year 2020 (FY 2020), which are anticipated to be implemented in Fall 2019, do not exceed the statistical thresholds and, therefore, do not result in a disparate impact to minority populations nor do they cause low-income households a disproportionate burden. The Service Equity Analysis compares the percentage of minority populations impacted by a Major Service Change to the Disparate Impact Threshold and compares the percentage of low-income households impacted by a Major Service Change to the Disproportionate Burden Threshold.
Supplementing and supporting the Service Equity Analysis are descriptions of all bus routes classified as Major Service Changes, demographic maps, data sources, and methodology.

Data used in the service equity analysis came from the 2012 to 2016 American Community Survey five-year estimates. Using Loudoun County adopted policies, demographic information for the service population was obtained from Census Block Groups within three miles of Premium Long-Haul Commuter Bus stops located in Loudoun County. In some instances, the service area included populations in Fairfax County due to the three-mile radius encompassing the park and ride lots. Maps of the routes with demographic information of the service area are provided for each Major Service Change planned for FY 2020.

Board of Supervisors’ Approval of Service Equity Analysis

In accordance with the Federal Transit Administration Circular 4702.1B, upon completion of a service or fare equity analysis, the transit provider shall brief its appropriate governing entity responsible for policy decisions regarding the service and/or fare change(s) and the associated equity impacts. The transit provider shall submit documentation with the Title VI Program as evidence of the consideration, awareness, and approval of the analysis.

The Loudoun County Board of Supervisors (Board) is the governing entity responsible for policy decisions regarding Loudoun County Transit Services. On June 20, 2019, the Department of Transportation and Capital Infrastructure presented the results of the service equity analysis to the Board at their regular Business Meeting. Documentation of the Board’s consideration, awareness, and approval of the analysis is provided in Figure 1.
At a business meeting of the Board of Supervisors of Loudoun County, Virginia, held in the County Government Center, Board of Supervisors’ Meeting Room, 1 Harrison St., S.E., Leesburg, Virginia, on Thursday June 20, 2019 at 5:00 p.m.

IN RE: Fiscal Year 2020 Service Equity Analysis for Loudoun County Transit Services Title VI (Six) Program (Countywide)

Vice Chairman Buona moved that the Board of Supervisors acknowledge their awareness and consideration of the Service Equity Analysis for the Fiscal Year 2020 Transit Service Changes, and approve the Service Equity Analysis as presented within the June 20, 2019, Board of Supervisors Business Meeting Action Item.

Vice Chairman Buona further moved that the Board of Supervisors direct staff to continue to prepare a Title VI Service Equity Analysis that is compliant with the U.S. Department of Transportation and Federal Transit Administration procedures for any transit service changes implemented in subsequent years.

Seconded by Supervisor Volpe.

Voting on the Motion: Supervisors Buffington, Buona, Higgins, Letourneau, Meyer, Randall, Saines, Umstattd, and Volpe – Yes; None – No.

COPY TESTE:

[Signature]
DEPUTY CLERK FOR THE LOUDOUN COUNTY BOARD OF SUPERVISORS

Item 4 Fiscal Year 2020 Service Equity Analysis for Loudoun County Transit Services Title VI (Six) Program (Countywide)
**Introduction**

Loudoun County’s Department of Transportation and Capital Infrastructure (DTCI) has prepared this Title VI Service Equity Report for the bus service changes that are anticipated to go into effect in Fall 2019 (Fiscal Year 2020). While this report provides the general public, the Loudoun County Board of Supervisors, and the Federal Transit Administration with general information about the scheduled service changes, the intention of this report is to analyze the service equity implications of Major Service Changes, as defined by DCTI’s 2017-2020 Title VI Program. Service equity, in this context, relates to ensuring that the level and quality of public transportation service is provided in a nondiscriminatory manner without regard to race, color or national origin.

The sections of this report include:

- **Background Information** with an overview of the regulatory requirement to consider both the service improvements and adverse impacts associated with service changes;
- **Loudoun County Transit Title VI Policies** that define what level of service modifications are classified as Major Service Changes and how to determine when a Disparate Impact or Disproportionate Burden are created;
- **Proposed FY 2020 Service Changes** with a description of Major Service Changes and an overview of why the service changes are necessary;
- **Service Area Demographics** with population overviews;
- **Summary of Service Changes** for Premium Long-Haul Commuter Bus service; and
- **Data Sources and Methodology** providing technical explanation of how the analysis was derived.

**Background Information**

In December 2014, Loudoun County accepted a low-interest loan of $195 million through the U.S. Department of Transportation’s Transportation Infrastructure Finance and Innovation Act (TIFIA). TIFIA funding is being used to help finance the County’s share of construction costs for the Dulles Corridor Metrorail Phase 2 project, which extends the Silver Line Metrorail into Loudoun County.

The Federal Transit Administration (FTA) requires all recipients of federal funding to ensure that their programs, policies and activities comply with U.S. Department of Transportation’s regulations under Title VI of the Civil Rights Act of 1964. FTA Circular 4702.1B, *Title VI Requirements and Guidelines for Federal Transit Administration Recipients*, specifies that all transit providers located in an urbanized area of 200,000 or more people and operating 50 or more fixed route vehicles in peak service, must conduct a Title VI equity analysis prior to implementing fare changes or service changes, including elimination of routes, creation of new routes, or modification to alignments, headways, or span of service of existing routes. The equity analysis is used to determine whether the proposed service change creates a disparate impact on minority populations or whether low-income households will bear a disproportion burden from the service change. According to the 2010 U.S. Census, the Washington, DC – VA – MD Urbanized Area extends into the eastern portion of Loudoun County. Loudoun County Transit meets the FTA criteria that requires equity analyses to be completed for service changes.
In summary, the FTA Circular states that the analysis should include:

- A statement of the agency’s “major service change” policy and corresponding numerical standards along with a threshold for determining whether a major service change results in a “disparate impact” to minority populations or a “disproportionate burden” to low-income communities, as well as how the public was engaged in developing those policies across all transit modes.
- A clear explanation of how the proposed service change meets or exceeds the operator’s Major Service Change Policy.
- A description of the public engagement process for setting the Major Service Change Policy.
- Inclusion of a copy of the operator’s Board of Directors meeting minutes or a resolution demonstrating the Board of Supervisor’s consideration, awareness, and approval of the major service change policy, disparate impact policy, and disproportionate burden policy.
- Demonstration that the operator has analyzed changes in service between the existing and proposed service, and has considered the degree of adverse effects when planning service changes.
- Description of data and methodology used in service equity analysis.
- Overlay maps and tables showing how the proposed service changes would impact minority and low-income populations.
- If a disparate impact is found, the operator will clearly demonstrate substantial legitimate justification for the proposed service change and analysis of alternatives for disparate impacts or that they have sought to avoid, minimize, or mitigate the impacts of a finding of disproportionate burden.

A finding of disparate impacts or disproportionate burden does not mean necessarily that the service change cannot go into effect. If adverse impacts are found, the transit provider is obligated to analyze alternatives that would serve the same legitimate objectives but with less impact. In accordance with FTA guidelines, the transit provider shall provide a meaningful opportunity for public comment on any proposed mitigation measures, including the less discriminatory alternatives that may be available.

The results of the service equity analysis (and fare equity analyses if applicable) are to be included with Loudoun County’s Title VI Program along with evidence that the Loudoun County Board of Supervisors considered, was aware of, and approved the analysis. Loudoun County is currently required to update and submit its Title VI Program to the Federal Transit Administration at least every three years. This [Loudoun County Transit Title VI Service Equity Report, Fiscal Year 2020 Service Changes for Implementation Fall 2019](#) will need to be included with the next triennial Title VI Program update, which is due to the FTA on December 1, 2019.

**Loudoun County Transit Title VI Policies**

In accordance with the Federal Transit Administration’s Title VI Requirements and Guidelines for Federal Transit Administration Recipients, Circular FTA C 4702.1B, dated October 1, 2012, and the Loudoun County 2017-2020 Title VI Program, approved by the Board of Supervisors on October 20, 2016, Loudoun County
has established the following policies to evaluate service changes and their impact on minority and low-income populations.

**Major Service Change Policy**
The Major Service Change Policy establishes numerical standards used for comparing between the existing and proposed service in order to determine whether the change or modification exceeds the set threshold for which a Service Equity Analysis or Fare Equity Analysis must be conducted.

Loudoun County Transit’s (LCT) Title VI Program, defines a major service change as:
- Adding or eliminating a bus route.
- Any change in service on any individual bus route that would add or eliminate more than 25% of the route’s weekly revenue miles (the number of miles a bus operates while carrying paying passengers).
- Any change in service on any individual bus route that would add or eliminate more than 25% of the route’s weekly revenue hours (the number of hours a bus operates while carrying paying passengers).

**Disparate Impact Policy**
Disparate Impact refers to a facially neutral policy or practice that disproportionately affects members of a group identified by race, color, or national origin. Loudoun County has established a threshold for determining whether adverse effects that occur in the context of major service changes are borne disproportionately by minority populations.

For service reductions, a disparate impact occurs when the average fare or service change affects minority riders 15 percent or greater than non-minority riders. Loudoun County Transit applies the disparate impact policy uniformly to all major service changes, regardless of mode. These policies will be reviewed on a cumulative basis.

Datasets and techniques used to determine the percentages of minority and non-minority riders impacted by a service change are described on Page 13 within the Analytical Framework portion of the section on Service Equity Analysis for Major Service Changes.

**Disproportionate Burden Policy**
Disproportionate Burden refers to a neutral policy or practice that disproportionately affects low-income households more than non-low-income households. Loudoun County has established a threshold for determining whether adverse effects that occur in the context of major service changes are borne disproportionately by low-income households.

For service reductions, a disproportionate burden occurs when the average fare or service change affects low-income riders 15 percent or greater than non-low-income riders. Loudoun County Transit applies the disproportionate burden policy uniformly to all major service changes, regardless of mode. These policies will be reviewed on a cumulative basis.
Datasets and techniques used to determine the percentages of low-income and non-low-income riders impacted by a service change are described on Page 13 within the Analytical Framework portion of the section on Service Equity Analysis for Major Service Changes.

**Public Engagement and Board of Supervisors’ Approval of Policies**

The established definitions and policies for *Major Service Change*, *Disparate Impact*, and *Disproportionate Burden* were developed through a public engagement process that took place from April 15, 2016, through May 16, 2016. LCT’s Title VI policy outreach efforts were implemented in coordination with the county’s public outreach for the update of the 2017-2022 Transit Development Plan. These outreach efforts included:

- Pop-Up Events (2);
- Public Workshops (5); and
- Online Outreach (with opportunities for submitting comments via email, paper mail, or online form).

On June 7, 2016, the Loudoun County Board of Supervisors approved (9-0) the Title VI policies for a Major Service Change, Disparate Impact, and Disproportionate Burden. Figure 2 is a copy of the Board of Supervisors’ vote of approval of the Major Service Change Policy, Disparate Impact Policy, and Disproportional Burden Policy.
At a business meeting of the Board of Supervisors of Loudoun County, Virginia, held in the County Government Center, Board of Supervisors’ Meeting Room, 1 Harrison Street, S.E., Leesburg, Virginia, on Tuesday, June 7, 2016 at 5:00 p.m.

IN RE: Title VI Policies for Transit Service (Countywide)

Vice Chairman Buona moved that the Board of Supervisors approve the Title VI policies for a major service change, disparate impact, and disproportional burden as shown on Attachment 1 to the June 7, 2016 Action Item.

Seconded by Supervisor Meyer.

Voting on the Motion: Supervisors Buffington, Buona, Higgins, Letourneau, Meyer, Randall, Saines, Umstattd and Volpe – Yes; None – No.

A COPY TESTE:

[Signature]

DEPUTY CLERK TO THE LOUDOUN COUNTY BOARD OF SUPERVISORS

(Item 87, Title VI Policies for Transit Service)
Proposed FY 2020 Service Changes

The proper fiscal management of Loudoun County’s transit system involves continual evaluation of route performance throughout all service types (i.e., Premium Long-Haul Commuter, Metro Connection, and Local Fixed Route). The Office of Transit and Commuter Services (staff) within the Loudoun County Department of Transportation and Capital Infrastructure (DTCI) monitors ridership metrics including rider boardings per revenue mile and rider boardings per revenue hour along with net costs per rider to gauge the performance of each route and to ensure that the transit system is effective and efficient. In accordance with the policies established in the 2018-2028 Transit Development Plan (TDP), any route that performs at less than ½ of the average for that route’s service type should be a candidate for adjustment or elimination. Additionally, staff solicits and considers input from stakeholders along with recommendations from the TDP. The TDP was prepared with public input and near- and long-term considerations for new land development projects and service needs. Stakeholders include the public, the Board of Supervisors, the Transit Advisory Board, the Disability Services Board, and various other boards and individual towns throughout the County.

On an annual basis as part of the budget process and available funding, staff proposes bus service changes based on service performance measures and stakeholder input. The expansion of Metrorail into Loudoun County necessitates a comprehensive evaluation of the transit service routes within the County. As of April 2019, the Metrorail Silver Line is anticipated to start operations in the Fall of 2020. Major Service changes to the Local Bus Fixed Route and Metro Connection Services are anticipated for Fiscal Year 2021. Therefore, the proposed service changes for FY 2020 are focused on improving the Premium Long Haul Commuter Bus Service.

The goals of the FY 2020 Proposed Service Changes focus on:

- Reducing travel times for passengers,
- Reducing the potential for late buses by strategically dividing single routes that once went through multiple zones of Washington, D.C. into several routes that go to specific zones,
- Improving route costs by merging buses that go to same zones of the city within the same time frame,
- All while maintaining the service availability from park and ride lots to Crystal City and Washington, D.C.

Twenty-seven Commuter Bus routes are recommended for modification. The proposed service changes will be publicly announced in the Summer of 2019 with a public comment period will to allow an opportunity for feedback on the proposed changes and equity analysis. In accordance with Federal Transit Administration requirements and Loudoun County’s 2017-2020 Title VI Program for transit services, staff evaluated the proposed modifications for impacts to minority and low-income populations within each service area. The results of this Equity Analysis will be included with the recommended service changes.
Determination of Major Service Change

In compliance with Loudoun County’s 2017-2020 Title VI Program, each Commuter Bus route proposed for reconfiguration or elimination was evaluated against the numerical thresholds established in the Major Service Change Policy. Service Changes that qualify as a Major Service Change were further analyzed for Service Equity impacts. Notably, although Loudoun County Commuter Bus routes have scheduled start and end points as well as fixed bus stop locations, each route does not necessarily follow a consistent fixed route to arrive at destinations and may take alternative roads between Loudoun County and the District depending on traffic.

In accordance with the Major Service Change Policy, any route elimination or reduction of more than 25 percent of the route’s revenue miles or revenue hours was considered as a Major Service Change. All service changes that met or exceeded the Major Service Change Policy were further analyzed for their impact on minority and low-income populations. Adverse impacts and service improvements were evaluated for each Major Service Change.

Table 1 lists all routes that are recommended for service changes for FY 2020, with an anticipated start date of Fall 2019. The table provides a comparison of the existing weekly revenue miles and weekly revenue hours versus the scheduled miles and hours as a result of the route’s reconfiguration or elimination. The percentage change to either revenue hours or revenue miles was used to determine which service modifications were classified as Major Service Changes. Types of service changes are described as follows:

- **R** = Reconfigure Route
- **E** = Eliminate Route
- **N** = New Route
### Table 1 | FY 2020 Proposed Service Changes

<table>
<thead>
<tr>
<th>Bus Route</th>
<th>Route Description</th>
<th>Type of Change</th>
<th>Existing</th>
<th>Proposed</th>
<th>Major Service Change Test</th>
</tr>
</thead>
<tbody>
<tr>
<td>103W</td>
<td>5:34 AM Ashburn North/DNTC to DC West</td>
<td>R</td>
<td>194.5</td>
<td>5:25</td>
<td>195.5</td>
</tr>
<tr>
<td>107W</td>
<td>6:43 AM Ashburn North/DNTC to Rosslyn/DC West</td>
<td>R</td>
<td>179.0</td>
<td>6:00</td>
<td>166</td>
</tr>
<tr>
<td>108W</td>
<td>6:58 AM Ashburn North/DNTC to Rosslyn/DC West</td>
<td>E</td>
<td>179.0</td>
<td>6:25</td>
<td>0</td>
</tr>
<tr>
<td>205W</td>
<td>6:15 AM Stone Ridge II/EastGate to DC West/Cntrl/South</td>
<td>R</td>
<td>199.5</td>
<td>6:50</td>
<td>213.5</td>
</tr>
<tr>
<td>304</td>
<td>7:05 AM DNTC to Rosslyn/DC West/Cntrl/East</td>
<td>R</td>
<td>165.0</td>
<td>6:55</td>
<td>156.5</td>
</tr>
<tr>
<td>305</td>
<td>7:15 AM DNTC to Rosslyn/DC West/Cntrl/East</td>
<td>R</td>
<td>165.0</td>
<td>6:55</td>
<td>149.5</td>
</tr>
<tr>
<td>306</td>
<td>7:20 AM DNTC to Rosslyn/DC West/Cntrl/East</td>
<td>R</td>
<td>165.0</td>
<td>6:55</td>
<td>156.5</td>
</tr>
<tr>
<td>307</td>
<td>7:30 AM DNTC to Rosslyn/DC West/Cntrl/East</td>
<td>R</td>
<td>165.0</td>
<td>6:55</td>
<td>154.5</td>
</tr>
<tr>
<td>404W</td>
<td>5:12 AM Purcellville /Leesburg /DNTC to DC West/Cntrl/South</td>
<td>R</td>
<td>303.5</td>
<td>9:15</td>
<td>277</td>
</tr>
<tr>
<td>412</td>
<td>6:30 AM Leesburg to DC West/Cntrl/East</td>
<td>R</td>
<td>204.5</td>
<td>7:15</td>
<td>243.5</td>
</tr>
<tr>
<td>413</td>
<td>6:20 AM Harmony/Leesburg to Rosslyn/DC West/Cntrl/East</td>
<td>R</td>
<td>250.0</td>
<td>9:25</td>
<td>237</td>
</tr>
<tr>
<td>417E</td>
<td>7:20 AM Leesburg/DNTC to Rosslyn/Crystal City/DC Cntrl/East</td>
<td>R</td>
<td>240.5</td>
<td>9:45</td>
<td>214</td>
</tr>
<tr>
<td>502D</td>
<td>3:15 PM DC East/West to DNTC /Loudoun Station/Ashburn North</td>
<td>R</td>
<td>202.5</td>
<td>8:20</td>
<td>198</td>
</tr>
<tr>
<td>508</td>
<td>4:13 PM DC East/West/Rosslyn to DNTC/Loudoun Station /Ashburn North</td>
<td>R</td>
<td>218.5</td>
<td>9:00</td>
<td>189.5</td>
</tr>
<tr>
<td>Bus Route</td>
<td>Route Description</td>
<td>Type of Change</td>
<td>Existing</td>
<td>Proposed</td>
<td>Major Service Change Test</td>
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<tr>
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<tr>
<td></td>
<td></td>
<td></td>
<td>Weekly Revenue Miles</td>
<td>Weekly Revenue Hours</td>
<td>Scheduled Weekly Revenue Miles</td>
</tr>
<tr>
<td>512</td>
<td>3:22 PM DC East to DNTC/Loudoun Station/Ashburn North</td>
<td>N</td>
<td>0.0</td>
<td>0:00</td>
<td>213.5</td>
</tr>
<tr>
<td>606</td>
<td>4:18 PM Navy Yard/DC West/Rosslyn to Stone Ridge</td>
<td>R</td>
<td>200.0</td>
<td>7:50</td>
<td>200</td>
</tr>
<tr>
<td>607</td>
<td>4:30 PM DC East/West/Rosslyn to Stone Ridge</td>
<td>R</td>
<td>205.5</td>
<td>8:35</td>
<td>199.5</td>
</tr>
<tr>
<td>701</td>
<td>3:15 PM DC West to DNTC</td>
<td>R</td>
<td>141.5</td>
<td>5:05</td>
<td>145.5</td>
</tr>
<tr>
<td>702</td>
<td>3:30 PM DC East/West to DNTC</td>
<td>R</td>
<td>158.0</td>
<td>6:50</td>
<td>145.5</td>
</tr>
<tr>
<td>707</td>
<td>4:45 PM Navy Yard/DC West to DNTC</td>
<td>E</td>
<td>155.0</td>
<td>6:35</td>
<td>0</td>
</tr>
<tr>
<td>803</td>
<td>3:35 PM DC East/West to Leesburg/Harmony/Purcellville</td>
<td>R</td>
<td>279.5</td>
<td>9:45</td>
<td>273.5</td>
</tr>
<tr>
<td>804</td>
<td>4:09 PM DC West/Rosslyn to Leesburg/Harmony/Purcellville</td>
<td>R</td>
<td>263.0</td>
<td>7:30</td>
<td>261.5</td>
</tr>
<tr>
<td>810</td>
<td>4:07 PM DC East/West/Rosslyn to Leesburg/Harmony/Purcellville</td>
<td>R</td>
<td>281.0</td>
<td>10:05</td>
<td>261.5</td>
</tr>
<tr>
<td>811</td>
<td>4:17 PM DC East/West/Rosslyn to Leesburg</td>
<td>R</td>
<td>204.5</td>
<td>8:10</td>
<td>273.5</td>
</tr>
<tr>
<td>813</td>
<td>4:25 PM DC East/West/Rosslyn to Harmony/Purcellville</td>
<td>R</td>
<td>285.0</td>
<td>9:30</td>
<td>256.5</td>
</tr>
<tr>
<td>814</td>
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<td>R</td>
<td>204.5</td>
<td>7:40</td>
<td>261.5</td>
</tr>
<tr>
<td>817</td>
<td>4:43 PM Navy Yard/DC West to Leesburg/Harmony/Purcellville</td>
<td>R</td>
<td>277.0</td>
<td>9:10</td>
<td>278</td>
</tr>
</tbody>
</table>
Route Descriptions for Recommended Major Service Changes

A description of each route reconfiguration or elimination or addition that was classified as a Major Service Change is provided below. The heading includes the Route Number, start time, and bus stops, along with the recommended route modification. To simplify the description of bus stops in Washington, D.C. (DC), the following zones have been designated for this report:

- **DC West** – stops on Virginia Avenue NW; 18th Street NW, K Street NW, 14th Street NW; I Street NW; and 19th Street NW.
- **DC East** – stops along 3rd Street; E Street NW and New Jersey Avenue NW; North Capitol Street NW; and H Street NW.
- **DC Central** – stops along Independence Avenue
- **DC South** – stops at Navy Yard Metro Station and Waterfront Metro Station

**FIGURE 3 | LOUDOUN COUNTY TRANSIT COMMUTER BUS ZONES IN WASHINGTON, D.C.**
**Premium Long-Haul Commuter Bus Routes**

**Route 103W – 5:34 AM Ashburn North/Dulles North Transit Center to DC West – Reconfigure to add DC stops in Central and South zones**

In an effort to draw passengers off Route 404, which is currently overcrowded, staff proposes to add DC stops to the Central and South zones on Route 103W. Route 103W is currently an underperforming route and has available passenger capacity. The reconfigured route would provide additional service options from the Ashburn North Park and Ride Lot while continuing to provide service to DC West with a start time of 5:34 AM.

**Route 108W – 6:58 AM Ashburn North/Dulles North Transit Center to Rosslyn/DC West – Eliminate route**

Due to low ridership from Ashburn North on Routes 107 and 108, staff proposes to combine these identical routes that start only 15 minutes apart into one route (Route 107) and disconnect it from the Dulles North Transit Center. The proposed start time for Route 107 would be 6:51 AM, which is between the existing start times. Neither the change in revenue miles nor the change in revenue hours for Route 107 was substantial enough to be classified as a Major Service Change. Dulles North Transit Center passengers will have the option of taking either Route 304 or Route 305 depending upon their destination within a similar timeframe.

**Route 305 – 7:15 AM Dulles North Transit Center to Rosslyn/DC West/Central/East – Reconfigure to remove Rosslyn/DC Central/East**

In consideration of available passenger capacity and long travel times on Route 304 and Route 305, which currently follow identical routes that start only 10 minutes apart, staff proposes to direct Route 304 to Rosslyn/DC Central/East and direct Route 305 to DC West only. The proposed start time for Route 304 would be 7:10 AM. Neither the change in revenue miles nor the change in revenue hours for Route 304 were substantial enough to be classified as Major Service Changes.

**Route 307 – 7:30 AM Dulles North Transit Center to Rosslyn/DC West/Central/East – Reconfigure to remove Rosslyn/DC East**

In an effort to reduce travel times for Route 306 and Route 307, which currently follow identical routes that start only 10 minutes apart, staff proposes to direct Route 306 to Rosslyn/DC Central/East and to direct Route 307 to DC West/Central. Neither the change in revenue miles nor the change in revenue hours for Route 306 were substantial enough to be classified as Major Service Changes.

**Route 413 – 6:20 AM Harmony/Leesburg to Rosslyn/DC West/Central/East – Reconfigure to remove Rosslyn/DC Central/East**

In an effort to reduce travel times for Route 413 and Route 412, which currently follow identical routes through DC only 10 minutes apart, staff proposes to split the routes into different zones of DC. The Harmony Park and Ride will be added to Route 412 with stops in Rosslyn/DC Central/East. Route 413 would depart 5 minutes earlier and take Harmony and Leesburg passengers to DC West. Neither the change in revenue miles nor the change in revenue hours for Route 412 were substantial enough to be classified as Major Service Changes.
Route 508 – 4:13 PM DC East/West/Rosslyn to Dulles North Transit Center/Loudoun Station/Ashburn North – Reconfigure to remove DC East/Central

Route 508 is an underperforming route that has low ridership coming from the East and Central zones of DC East. In an effort to reduce travel times for the majority of passengers from DC West, DTCI proposes to reconfigure the route. The new start time of 4:40 PM at the first stop in the DC West zone is comparable to the current route schedule. Passengers from DC East/Central going to the Dulles North Transit Center would be able to take Route 652D, which departs two minutes earlier, or Route 705, which departs ten minutes later. Passengers from DC East/Central going to Loudoun Station or Ashburn North will need to use other public transportation to reach pick-up locations in DC West or drive to Dulles North Transit Center or another park and ride lot. It should be noted that neither Loudoun Station nor Ashburn North currently have morning routes that stop in DC East/Central.

Route 512 – 3:22 PM DC East to Dulles North Transit Center/Loudoun Station/Ashburn North – New route

Route 512 is proposed to accommodate passengers from Route 502 and Route 702 that were displaced by the removal of DC East from those routes. The new route will begin passenger service at 3:22 PM in DC East at the Loudoun County Transit bus stop at H St. and 4th St. The removal of DC East from Route 502 and Route 702 did not result in changes to revenue miles or revenue hours that qualified as Major Service Changes.

Route 707 – 4:45 PM DC South/West to Dulles North Transit Center – Eliminate route

Due to low ridership on Route 707 and an identical route through DC South and West starting two minutes earlier on Route 817, which also has low ridership, DTCI proposes to add the Dulles North Transit Center to Route 817 and eliminate Route 707.

Route 811 – 4:17 PM DC East/West/Rosslyn to Leesburg – Reconfigure to remove DC West and add Harmony/Purcellville

Due to low ridership on Route 811, as well as other DC East/West/Rosslyn routes starting in the four o’clock hour and going to park and ride lots in Leesburg or Harmony and Purcellville, DTCI proposes separating the DC zones into different buses and adding Harmony and Purcellville drop-offs to provide passengers with similar pickup and destination points with less travel time. Routes 810, 811, 813, 814, and 817 were reconfigured to split the DC zones. Route 814 is described below. However, the changes in revenue hours and revenue miles for Routes 810, 813, and 817 did not qualify as Major Service Changes.

Route 814 – 4:30 PM DC East/West to Leesburg – Reconfigure to remove DC East and add Harmony /Purcellville

In conjunction with proposed route reconfigurations described above for Routes 810, 811, 813, 814, and 817 to separate the service from DC into zones, DTCI proposes to remove DC East stops and add the Harmony and Purcellville Park and Ride Lots to reduce travel times out of DC.
Service Equity Analysis for Major Service Changes

When planning for Major Service Changes, Loudoun County Transit must consider potential adverse effects. The Disparate Impact Policy and Disproportionate Burden Policy establish a statistical threshold for comparing the impacts borne by minority and low-income populations to the overall service population.

This section of the report provides the substance of the service equity analysis. It begins with an analytical framework outlining technical data sources used and procedural methods employed. The analysis is based on Census Block Group-level Census demographic data and therefore does not represent ridership directly. Next, the service area demographics provide the basis of the Disparate Impact and Disproportionate Burden statistical thresholds. The report then provides summaries of the service populations affected by Major Service Changes. Maps showing the affected minority and low-income US Census Block Groups for each route that qualified as a major service change are provided at the conclusion of the report.

Analytical Framework

This section describes in detail the sources of data and the procedural methods used in the Service Equity. The end of this section contains the service area maps with demographic information showing minority and low-income Census Block Groups.

Datasets and Techniques Used in Analysis

For this analysis, the primary data source was the U.S. Census Bureau’s American Community Survey (ACS) five-year estimates from 2012 to 2016, measured at the Census Block Group level. Bus stop point shapefiles and route line shapefiles provided by Loudoun County’s Office of Mapping and Geographic Information were also used to determine the service areas within Loudoun County and Fairfax County for the entire Loudoun County Transit (LCT) Bus network, as well as the service areas of the current route alignments that have been planned for service changes. The Premium Long-Haul Commuter Bus service area was defined by a three-mile buffer around stops serving the route. Census Block Groups contained either partially or wholly within those service areas were used for the calculation.

For the Disparate Impact analysis, the primary ACS table utilized was Table B03002, “Hispanic or Latino Origin by Race.” This table identifies all minority and non-minority populations within a block group, including Hispanic or Latino. To determine minority population for the LCT Bus service area, total population estimates and minority population estimates (total population minus non-Hispanic White population) for Census Block Groups were used along with bus stop point shapefiles and route line shapefiles. The analysis was completed in an open source data manipulation/statistical package software (i.e., R using the sf package), which is used to make programming operations route faster and reduce human error. The software replicates tools used in Geographic Information Systems (GIS) software such as ArcGIS.

For the Disproportionate Burden analysis, the primary ACS table utilized was Table B19001, “Household Income in the Past 12 Months (In 2015 Inflation-Adjusted Dollars).” This table provides an aggregate of households reporting incomes under half of the Area Median Income, which includes all income
categories under $50,000. To determine low-income households for the LCT Bus service area, Census
Block Groups with household incomes below $50,000 were used along with bus stop point data. The
analysis was also completed in R using the sf package, which replicates tools used in Geographic
Information Systems (GIS) software such as ArcGIS.

The same LCT service areas were evaluated for both the Disparate Impact analysis and Disproportionate
Burden analysis.

**Analytical Methodology**

Loudoun County Transit used the procedures noted below to conduct this service equity analysis.

1. All proposed changes were examined to see if they met the Loudoun County Transit’s definition
   of a Major Service Change.
2. For routes that qualified as Major Service Changes, each route was categorized by whether the
   change was considered as an adverse change or a non-adverse change for the population
   currently served by the route. Loudoun County Transit (LCT) considers modifications such as route
   discontinuation, truncating or eliminating a route segment, rerouting an existing route, headway
   increases, and reduction of service span to be service changes that may have an adverse effect.
   LCT considers the degree of adverse effects, and analyzes those effects, when planning service
   changes. A non-adverse change would have positive impacts on those within the service area of
   the route, such as the addition of new service, an increase in frequency, or an increase in span of
   an existing service.
3. Using geo-referenced point data and Census Block Group data, the service area population and
   the total number of households were determined for all current Local Fixed-Route bus service
   areas and current Premium Long-Haul Commuter bus service areas.
   a. Premium Long-Haul Commuter Bus: For this analysis, LCT’s Premium Long-Haul
      Commuter Bus Service Area was defined as a three-mile buffer around every LCT
      Commuter Bus stop. Total population and households, as well as minority populations
      and low-income households, were then determined for the Premium Long-Haul
      Commuter Bus Service Area.
4. Next, the populations and households affected by the Major Service Change were determined for
   the route by the same means used to calculate the totals as described in Step 3, except that the
   calculation was focused on only the specific route rather than the all routes within the service
   type (Premium Long-Haul Commuter Bus) generally.
5. For each of the adverse and service improvement changes, totals were then found for minority
   populations and low-income households impacted by each of the identified major service
   changes.
6. Based on the definitions of disparate impact and disproportionate burden, explained above, the
   overall thresholds were determined as follows:
   a. Disparate Impact Threshold for adverse changes: Loudoun County Transit’s service area
      percentage of population that is minority, plus 15 percent.
   b. Disparate Impact Threshold for service improvements: Loudoun County Transit’s service
      area percentage of population that is minority, minus 15 percent.
c. Disproportionate Burden Threshold for adverse changes: Loudoun County Transit’s service area percentage of households that earn less than half of the area median income, plus 15 percent.

d. Disproportionate Burden Threshold for service improvements: Loudoun County Transit’s service area percent of households that earn less than half of the area median income, minus 15 percent.

7. Finally, for the adverse and for the service improvements separately, the aggregated percent of minority populations and the aggregated percent of low-income households were compared to the appropriate Disparate Impact/Disproportionate Burden thresholds in order to determine if a statistical disparate impact or disproportionate burden had occurred.

Service Area Demographics

Based on U.S. Census Bureau American Community Survey (ACS) five-year estimates from 2012 to 2016, measured at the Census Block Group level, and georeferenced bus stop data provided by Loudoun County’s Office of Mapping and Geographic Information, the following thresholds for assessing Major Service Change impacts were determined for Premium Long-Haul Commuter Bus. Given that the three-mile radius of several Loudoun County Transit Commuter Bus stops includes portions of Fairfax County, a relatively small percentage of the calculated service area population and total households includes residents of Fairfax County.

Premium Long-Haul Commuter Bus

Minority populations comprised approximately 43.8 percent of the Loudoun County Transit (LCT) Premium Long-Haul Commuter Bus service area population (comprised of all Census Block Groups within three miles of Commuter Bus stops in Loudoun County). After applying LCT’s Disparate Impact policy, the threshold for a Premium Long-Haul Commuter Bus Disparate Impact is 58.8 percent (43.8 percent system-wide plus 15 percent) for adverse changes and 28.8 percent (43.8 percent system-wide minus 15 percent) for service improvements.

Low-income households comprised approximately 14.5 percent of the households in the LCT Premium Long-Haul Commuter Bus service area (comprised of all Census Block Groups within three miles of Commuter Bus stops in Loudoun County). After applying LCT’s Disproportionate Burden policy, the threshold for a Premium Long-Haul Commuter Bus Disproportionate Burden is 29.5 percent (14.5 percent plus 15 percent) for adverse changes and 0.0 percent (14.5 percent minus 15 percent) for service improvements.

The population and impact thresholds for assessing Disparate Impact and Disproportionate Burden for Premium Long-Haul Commuter Bus routes are provided in Table 2.

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1 With updated U.S. Census Bureau’s American Community Survey 2012-2016 demographic data, the service area for Premium Long-Haul Commuter Bus is below 15 percent low-income, which is also the Commuter Bus non-adverse Disproportionate Burden Threshold. DCTI will review its demographics and thresholds during the development of its next Title VI Program.
TABLE 2 | LOUDOUN COUNTY TRANSIT PREMIUM LONG-HAUL COMMUTER BUS MINORITY AND LOW-INCOME POPULATIONS (2012-2016 ACS)

<table>
<thead>
<tr>
<th>Service Area Population</th>
<th>Minority Population</th>
<th>Percent Minority</th>
<th>Adverse Disparate Impact Threshold</th>
<th>Non-Adverse Disparate Impact Threshold</th>
</tr>
</thead>
<tbody>
<tr>
<td>392,471</td>
<td>171,912</td>
<td>43.8%</td>
<td>58.8%</td>
<td>28.8%</td>
</tr>
</tbody>
</table>

Disproportionate Burden

<table>
<thead>
<tr>
<th>Service Area Households</th>
<th>Low-Income Households</th>
<th>Percent Low-Income Households</th>
<th>Adverse Disproportionate Burden Threshold</th>
<th>Non-Adverse Disproportionate Burden Threshold</th>
</tr>
</thead>
<tbody>
<tr>
<td>125,490</td>
<td>18,137</td>
<td>14.5%</td>
<td>29.5%</td>
<td>0.0%</td>
</tr>
</tbody>
</table>

Summary of Service Changes – Premium Long-Haul Commuter Bus

To determine whether this package of changes complies with Loudoun County Transit’s Title VI policies, aggregated percentages of minority and low-income populations were determined for all adverse Premium Long-Haul Commuter Bus major service changes and service improvements on Premium Long-Haul Commuter Bus major service changes. Overall, the changes to Premium Long-Haul Commuter Bus service were found to have no disparate impact on minority communities, or disproportionate burden on low-income households.

Adverse Service Changes

Table 3 breaks down the minority population and its share of the total population residing in Census Block Groups within three miles of each stop on Premium Long-Haul Commuter routes experiencing an adverse Major Service Change. As shown in the “Subtotal” row, when compared to the disparate impact threshold for adverse major service changes (58.8 percent and higher), the routes did not cumulatively meet the criterion for potential disparate impact.

TABLE 3 | DISPARATE IMPACT - SUMMARY OF ADVERSE PREMIUM LONG-HAUL COMMUTER BUS SERVICE CHANGES

<table>
<thead>
<tr>
<th>Route</th>
<th>Change Type</th>
<th>Service Area Population</th>
<th>Service Area Minority Population</th>
<th>Percent Minority Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>108W</td>
<td>Adverse</td>
<td>178,697</td>
<td>94,777</td>
<td>53.0%</td>
</tr>
<tr>
<td>305</td>
<td>Adverse</td>
<td>82,020</td>
<td>50,931</td>
<td>62.1%</td>
</tr>
<tr>
<td>307</td>
<td>Adverse</td>
<td>82,020</td>
<td>50,931</td>
<td>62.1%</td>
</tr>
<tr>
<td>413</td>
<td>Adverse</td>
<td>112,775</td>
<td>37,524</td>
<td>33.3%</td>
</tr>
<tr>
<td>508</td>
<td>Adverse</td>
<td>276,130</td>
<td>139,539</td>
<td>50.5%</td>
</tr>
<tr>
<td>707</td>
<td>Adverse</td>
<td>82,020</td>
<td>50,931</td>
<td>62.1%</td>
</tr>
<tr>
<td><strong>SUBTOTAL</strong></td>
<td><strong>813,662</strong></td>
<td><strong>424,633</strong></td>
<td><strong>52.2%</strong></td>
<td></td>
</tr>
</tbody>
</table>

Disparate Impact Threshold for Adverse Changes 58.8%

Does this package of changes meet the Disparate Impact Threshold? No
Table 4 breaks down the number of low-income households and their share of all households in Census Block Groups within three miles of each stop on Premium Long-Haul Commuter routes experiencing an adverse Major Service Change. As shown in the “Subtotal” row, when compared to the disproportionate burden threshold for adverse changes (29.5 percent and higher), the routes did not cumulatively meet the criterion for a potential disproportionate burden.

**Table 4 | Disproportionate Burden - Summary of Adverse Premium Long-Haul Commuter Bus Service Changes**

<table>
<thead>
<tr>
<th>Route</th>
<th>Change Type</th>
<th>Service Area Households</th>
<th>Service Area Low-Income Households</th>
<th>Percent Low-Income Households</th>
</tr>
</thead>
<tbody>
<tr>
<td>108W</td>
<td>Adverse</td>
<td>59,827</td>
<td>10,990</td>
<td>18.4%</td>
</tr>
<tr>
<td>305</td>
<td>Adverse</td>
<td>26,648</td>
<td>5,076</td>
<td>19.0%</td>
</tr>
<tr>
<td>307</td>
<td>Adverse</td>
<td>26,648</td>
<td>5,076</td>
<td>19.0%</td>
</tr>
<tr>
<td>413</td>
<td>Adverse</td>
<td>35,741</td>
<td>5,773</td>
<td>16.2%</td>
</tr>
<tr>
<td>508</td>
<td>Adverse</td>
<td>91,084</td>
<td>14,650</td>
<td>16.1%</td>
</tr>
<tr>
<td>707</td>
<td>Adverse</td>
<td>26,648</td>
<td>5,076</td>
<td>19.0%</td>
</tr>
<tr>
<td><strong>SUBTOTAL</strong></td>
<td></td>
<td><strong>266,596</strong></td>
<td><strong>46,641</strong></td>
<td><strong>17.5%</strong></td>
</tr>
</tbody>
</table>

Disproportionate Burden Threshold for Adverse Changes | 29.5%

Does this package of changes meet the Disproportionate Burden Threshold? No

**Service Improvements**

Table 5 breaks down the minority population and its share of the total population residing in Census Block Groups within three miles of each stop on Premium Long-Haul Commuter routes experiencing a service improvement that qualifies as a major service change. As shown in the “Subtotal” row, when compared to the disparate impact threshold for service improvements (28.8 percent and lower), the routes did not cumulatively meet the criteria for potential disparate impact.

**Table 5 | Disparate Impact - Summary of Non-Adverse Premium Long-Haul Commuter Bus Service Changes**

<table>
<thead>
<tr>
<th>Route</th>
<th>Service Improvement Type</th>
<th>Service Area Population</th>
<th>Service Area Minority Population</th>
<th>Percent Minority Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>103W</td>
<td>Reconfigure Route</td>
<td>178,697</td>
<td>94,777</td>
<td>53.0%</td>
</tr>
<tr>
<td>512</td>
<td>New Route</td>
<td>276,130</td>
<td>139,539</td>
<td>50.5%</td>
</tr>
<tr>
<td>811</td>
<td>Reconfigure Route</td>
<td>87,982</td>
<td>32,858</td>
<td>37.3%</td>
</tr>
<tr>
<td>814</td>
<td>Reconfigure Route</td>
<td>87,982</td>
<td>32,858</td>
<td>37.3%</td>
</tr>
<tr>
<td><strong>SUBTOTAL</strong></td>
<td></td>
<td><strong>630,791</strong></td>
<td><strong>300,032</strong></td>
<td><strong>47.6%</strong></td>
</tr>
</tbody>
</table>

Disparate Impact Threshold for Non-Adverse Changes | 28.8%

Does this package of changes meet the Disparate Impact Threshold? No

Table 6 breaks down the number of low-income households and their share of all households in Census Block Groups within three miles of each stop on Premium Long-Haul Commuter routes experiencing
service improvements that qualified as a major service change. As shown in the “Subtotal” row, when compared to the disproportionate burden threshold for service improvements that qualified as major service changes (zero percent), the routes did not cumulatively meet the criteria for a potential disproportionate burden.

**Table 6 | Disproportionate Burden - Summary of Non-Adverse Premium Long-Haul Commuter Bus Service Changes**

<table>
<thead>
<tr>
<th>Route</th>
<th>Service Improvement Type</th>
<th>Service Area Households</th>
<th>Service Area Low-Income Households</th>
<th>Percent Low-Income Households</th>
</tr>
</thead>
<tbody>
<tr>
<td>103W</td>
<td>Reconfigure Route</td>
<td>59,827</td>
<td>10,990</td>
<td>18.4%</td>
</tr>
<tr>
<td>512</td>
<td>New Route</td>
<td>91,084</td>
<td>14,650</td>
<td>16.1%</td>
</tr>
<tr>
<td>811</td>
<td>Reconfigure Route</td>
<td>27,896</td>
<td>4,609</td>
<td>16.5%</td>
</tr>
<tr>
<td>814</td>
<td>Reconfigure Route</td>
<td>27,896</td>
<td>4,609</td>
<td>16.5%</td>
</tr>
<tr>
<td><strong>SUBTOTAL</strong></td>
<td></td>
<td><strong>206,703</strong></td>
<td><strong>34,858</strong></td>
<td><strong>16.9%</strong></td>
</tr>
</tbody>
</table>

Disproportionate Burden Threshold for Non-Adverse Changes: 0.0%

Does this package of changes meet the Disproportionate Burden Threshold? No

**Overlay Maps with Service Changes and Demographic Data**
Maps for each Major Service Change have been overlain on population demographics for the service area and are provided in Figure 4 through Figure 23. Separate maps are provided to illustrate minority populations and low-income populations based on Census Blocks Groups. Please note that the “routes” were included for illustrative purposes only as Loudoun County Commuter Bus routes have set start and end as well as stop points, each route does not necessarily follow a consistent fixed route to arrive at destinations.
FIGURE 4 | PROPOSED ROUTE 103W MODIFICATION - MINORITY

LOUDOUN COUNTY SERVICE EQUITY ANALYSIS: FISCAL YEAR 2020 SERVICE CHANGES

PROPOSED RUN 103W MODIFICATION

Run 103W  |  Current Stop  |  New Stop  |  Percent Minority  |  Proposed Modification:
| Blue | Current Alignment  | New Stop  | Below 43.8%  | Add DC stops to the Central and South zones  |
| Orange | Proposed Alignment  |  | 43.8% and Above  |  |

Proposed Service: Washington, DC

Loudoun County Boundary

Legend:
- Blue: Current Alignment
- Orange: Proposed Alignment
- Dark Brown: Current Stop
- Light Brown: New Stop

Percent Minority:
- Below 43.8%
- 43.8% and Above

Legend:
- Loudoun County Boundary
- Proposed Service: Washington, DC

Map showing proposed route and minority population distribution.
FIGURE 5 | PROPOSED ROUTE 103W MODIFICATION - LOW INCOME

LOUDOUN COUNTY SERVICE EQUITY ANALYSIS: FISCAL YEAR 2020 SERVICE CHANGES

PROPOSED RUN 103W MODIFICATION

Run 103W
- Current Alignment
- Proposed Alignment

Current Stop
New Stop

Percent Low Income
- Below 14.5%
- 14.5% and Above

Proposed Modification:
Add DC stops to the Central and South zones

Proposed Service: Washington, DC
Figure 6 | Proposed Route 108W Modification – Minority

Proposed Run 108W Modification:
- Run 108W (Eliminate)
- 108W Stop (Eliminate)

Percent Minority:
- Below 43.8%
- 43.8% and Above

Proposed Modification:
- Eliminate run. Combine Runs 107 and 108 (identical alignments)

Stops in Rosslyn and Washington, DC

Loudoun County Boundary
**FIGURE 8 | PROPOSED ROUTE 305 MODIFICATION – MINORITY**

**PROPOSED RUN 305 MODIFICATION**

- **Run 305**
- **Preserve Stop**
- **Remove Stop**

**Percent Minority**

- Below 43.8%
- 43.8% and Above

**Proposed Modification:**
Operate direct service to DC West only. Eliminate service at Rosslyn and DC Central/East.

**Proposed Service:** Rosslyn and Washington, DC

- Loudoun County Boundary

**Map:**
- Rosslyn and Washington, DC
- Proposed Run 305
FIGURE 9 | PROPOSED ROUTE 305 MODIFICATION – LOW INCOME

Proposed Modification:
- Operate direct service to DC West only.
- Eliminate service at Rosslyn and DC Central/East.

Legend:
- Preserve Stop: Below 14.5%
- Remove Stop: 14.5% and Above

Loudoun County Boundary

Proposed Service: Rosslyn and Washington, DC
Proposed Route 307 Modification – Minority

**Proposed Modification:**
Operate direct service to DC West and Central only.
Eliminate service at Roslyn and DC East

**Proposed Run 307 Modification**
- Run 307
- Preserve Stop: Below 43.8%
- Remove Stop: 43.8% and Above

**Proposed Service:** Roslyn and Washington, DC

**Map:**
- Loudoun County Boundary
- Washington Dulles International Airport
Figure 11 | Proposed Route 307 Modification – Low Income

Proposed Modification:
Operate direct service to DC West and Central only.
Eliminate service at Rosslyn and DC East.

Proposed Service: Rosslyn and Washington, DC.
FIGURE 12 | PROPOSED ROUTE 413 MODIFICATION – MINORITY

LOUDOUN COUNTY SERVICE EQUITY ANALYSIS: FISCAL YEAR 2020 SERVICE CHANGES

PROPOSED RUN 413 MODIFICATION

- Run 413
- Preserve Stop: Below 43.8%
- Remove Stop: 43.8% and Above

Proposed Modification:
- Operate direct service to DC West only
- Eliminate service at Rosslyn and DC Central/East

Louisdoun County Boundary

Proposed Service: Rosslyn and Washington, DC
FIGURE 13 | PROPOSED ROUTE 413 MODIFICATION – LOW INCOME

PROPOSED RUN 413 MODIFICATION

<table>
<thead>
<tr>
<th>Run 413</th>
<th>Percent Low Income</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Preserve Stop</td>
</tr>
<tr>
<td></td>
<td>Below 14.5%</td>
</tr>
<tr>
<td></td>
<td>Remove Stop</td>
</tr>
<tr>
<td></td>
<td>14.5% and Above</td>
</tr>
</tbody>
</table>

Proposed Modification:
Operate direct service to DC West only.
Eliminate service at Rosslyn and DC Central/East.

Loudoun County Boundary

Proposed Service: Rosslyn and Washington, DC
Figure 14 | Proposed Route 508 Modification – Minority

Proposed Route 508D Modification:
- Blue line: Run 508D
- Black dot: Preserve Stop (Below 43.8%)
- Red cross: Remove Stop (43.8% and Above)

Proposed Modification:
Operate direct service to Rosslyn and DC west only.
Eliminate service at DC Central/East

Loudoun County Boundary

Proposed Service: Rosslyn and Washington, DC

Dulles International Airport
FIGURE 16 | PROPOSED ROUTE 512 – MINORITY

Proposed Run 512

- Proposed Run 512
- Proposed Run 512 Stop

Percent Minority

- Below 43.8%
- 43.8% and Above

Proposed Modification:
Route proposed to accommodate passengers from Run 502
and Run 702 that were displaced by the removal of DC East
from those runs.

Loudoun County Boundary

Proposed Service: Washington, DC

- Dulles International Airport
- Proposed Route 512
- Loudoun County Boundary

Miles

Map showing the proposed route 512 and the proposed service area in Washington, DC.
FIGURE 17 | PROPOSED ROUTE 512 – LOW INCOME

Proposed Modification:
Route proposed to accommodate passengers from Run 5Q2 and Run 7Q2 that were displaced by the removal of DC East from those runs.
FIGURE 18 | PROPOSED ROUTE 707 MODIFICATION – MINORITY
FIGURE 19 | PROPOSED ROUTE 707 MODIFICATION – LOW INCOME
FIGURE 20 | PROPOSED ROUTE 811 MODIFICATION – MINORITY
FIGURE 21 | PROPOSED ROUTE 811 MODIFICATION – LOW INCOME

PROPOSED RUN 811 MODIFICATION

Run 811
- Current Alignment
- Proposed Alignment

Percent Low Income
- Below 14.5%
- 14.5% and Above

Proposed Modification:
- Remove DC East stops and add the Harmony and Poolesville Park & Ride Lots to reduce travel times out of DC.

Lououton County Boundary

Proposed Service: Roselyn and Washington, DC

Dulles International Airport
Figure 22 | Proposed Route 814 Modification – Minority

Proposed Modification: Remove DC East stops and add the Harmony and Purcellville Park & Ride Lots to reduce travel times out of DC.

Legend:
- New Stop
- Preserve Stop
- Remove Stop
- Percent Minority: Below 43.8%
- Percent Minority: 43.8% and Above

Map showing the proposed route modifications with highlighted areas and stops.
FIGURE 23 | PROPOSED ROUTE 814 MODIFICATION – LOW INCOME

LOUDOUN COUNTY SERVICE EQUITY ANALYSIS: FISCAL YEAR 2020 SERVICE CHANGES

PROPOSED RUN 814 MODIFICATION

Run 814
Current Alignment
Preserve Stop
New Stop
Proposed Alignment
Remove Stop

Percent Low Income
Below 14.5%
14.5% and Above

Proposed Modification: Remove DC East stops and add the Harmony and Purcellville Park & Ride Lots to reduce travel times out of DC

Loudoun County Boundary

Proposed Service: Washington, DC

(Dulles International Airport)