Customer Service, Operations and Security Committee

Action Item III-A

December 1, 2016

Metrorail Span of Service Recommendation

Washington Metropolitan Area Transit Authority

Board Action/Information Summary

◉ Action ○ Information	MEAD Number: 201823	Resolution: ◉ Yes ○ No

TITLE:

Metrorail Span of Service Recommendation

PRESENTATION SUMMARY:

To provide an overview of the public outreach and Title VI equity analysis conducted on the four proposals to change Metrorail's span of service, and to provide a recommendation for the Board regarding changes to the Metrorail hours of operation and Metrobus mitigation services.

PURPOSE:

Staff seeks Board approval of changes to the Metrorail Span of Service and Metrobus mitigation services, as well as approval of the Title VI Equity Analysis conducted on the Span of Service proposals.

DESCRIPTION:

In order to restore safe and reliable rail service, management recommended a change to the balance in passenger rail service time and track maintenance time. Adding eight hours weekly to the maintenance window permits Metro to launch an aggressive, industry grade maintenance program that will gradually shift the Authority away from emergency repairs towards preventive maintenance of its rail infrastructure. This program is consistent with and addresses Federal Transit Administration (FTA) recommendations, which include providing more maintenance track time – and central to that strategy is providing adequate overnight track time.

Therefore, Metro is considering four proposals to adjust the Metrorail Span of Service to provide an additional eight hours of track maintenance time each week (a 20% increase) to allow for extended work periods needed to improve safety and conduct state of good repair, continuous maintenance efforts.

Metro staff conducted a Compact-required public hearing, additional public outreach, and Title VI equity analysis to inform the Board of Directors in its decision making regarding changes to the Metrorail operating hours.

Key Highlights:

- An unprecedented number -- nearly 16,000 public comments were received – surpassing other recent, high-profile issues, including the station naming survey for Phase 1 of the Silver Line.
- Of the four options proposed, the public survey found overwhelming preference

(45% of all respondents) for Proposal 3, which would adjust the Metrorail operating hours by closing the system at 11:30 p.m. on Monday – Thursday; closing at 1 a.m. on Friday and Saturday nights; and operating from 8 a.m. to 11 p.m. on Sunday.
- The preference for Proposal 3 was found across all demographics, including low-income and minority customers, as well as those customers most impacted by the proposed changes. For each of those categories, 44% chose Proposal 3.
- A Title VI Equity Analysis conducted by Metro staff finds that Proposal 3 will result in a disparate impact on minority populations and a disproportionate burden on low-income populations; however, implementing this service change does not violate Title VI or Environmental Justice.
- Metrobus has developed a "Lifeline Network Access Service Plan" to provide enhanced bus capacity and connections that assist in mitigating the impact of the changes to Metrorail service hours.

Background and History:

Outreach and Public Hearing

In October 2016, public outreach was conducted to gather input on the four options of rail operating hours, as well as to gather input on what travel alternatives customers would consider if the hours of operation are altered.

The public was asked to comment on four scenarios for adjusting the Metrorail Span of Service:

	Proposal 1	Proposal 2	Proposal 3	Proposal 4
Mon-Thu	5am-midnight	5am-11:30pm	5am-11:30pm	5am-midnight
Fri	5am-midnight	5am-midnight	5am-1am	5am-3am
Sat	7am-midnight	7am-midnight	7am-1am	9am-3am
Sun	7am-10pm	7am-11:30pm	8am-11pm	noon-11pm

The public comment period spanned from Saturday, October 1 through Tuesday, October 25, and communications and outreach efforts included:

- In-station outreach events, targeting stations and times to reach customers most impacted by proposed changes
- Stakeholder communications
- Targeted marketing & media, including newspaper advertisements, press releases and social media posts
- Open house & public hearing held at Metro Headquarters on October 20, spanning more than nine hours

Feedback was collected through the following sources:

- Paper surveys in English and Spanish at in-station outreach events
- Paper surveys in English and Spanish from Community Based Organizations & the Open House

- Online survey of the Amplify Customer Community in English
- Online survey available to the general public in English and Spanish
- Written comments submitted to WrittenTestimony@wmata.com
- Verbal public testimony during the Public Hearing

Discussion:

Public Comment Findings

Metro collected nearly 16,000 comments, which includes survey responses, written testimony submitted via email, and comments received during the public hearing. Ninety-five percent of the comments (14,975) were received via survey. An additional 760 written comments and 65 public hearing comments were also received.

This outreach effort eclipsed the previous high record of survey participation for the initial naming of Silver Line Phase 1 stations, when approximately 13,500 surveys were completed.

Generally, minority customers comprise 45% of the riders on Metrorail and low-income ridership is nearly 13%. However, these percentages vary by time of day, with late-night and early off-peak hours reflecting a higher percentage of low income and minority customers.

As noted previously, efforts were made during outreach to include low-income and minority populations by visiting stations during off-peak hours. As a result, the survey demographics included the following populations:

- Low-Income: 15%
- Greatly impacted/Impacted: 41%
- Not at all or only modestly impacted: 59%

The public comment revealed the following:

- The survey found that overwhelmingly, nearly twice as many customers chose Proposal 3 (45%) as their preferred approach for gaining the additional 8 hours of maintenance window needed.
- The survey found that Proposal 3 is the chosen approach for all groups, including low-income, minority, and customers most impacted by the proposed changes.
- In addition, the survey found that 85% percent of respondents would not use Metrobus as their primary alternative to Metrorail. For riders who would be "greatly impacted" by proposed changes, 29% reported they would use Metrobus as a primary and 50% as a secondary option to complete their travel.
- At the public hearing, the majority of the 65 speakers expressed opposition to all permanent service cuts.
- The majority of emailed comments focused on additional ideas for adjusting the operating hours or were against Proposal 4, which proposed to maintain late-night rail service but opened the system at noon on Sunday. Many additional written comments were against all permanent cuts and about other topics, like budget.

For additional information, see:

- Attachment B for the "*Public Outreach & Input Report* – Docket B16-03: Change of Metrorail Operating Hours"

Equity Analysis

The Federal Transit Administration (FTA) requires that WMATA complete a service equity analysis if a major service change lasts longer than 12 months; the analysis must be approved by the Board prior to reaching the 12-month mark. The equity analysis must evaluate the impacts of the proposed service changes on minority and low-income populations, which requires extensive research, outreach, reporting, and Board approval.

A Title VI Equity Analysis conducted by Metro staff finds that Proposal 3 will result in a disparate impact (DI) on minority populations and a disproportionate burden (DB) on low-income populations and there appears to be a less discriminatory alternative before considering public input. Public input revealed, however, that Proposal 3 is overwhelmingly preferred by rail riders, including minority and low-income riders. Thus, implementing this service change does not violate Title VI or Environmental Justice (EJ) because: (1) Metro has a substantial legitimate justification for the proposed service change; (2) practically speaking, no less discriminatory alternative exists because minority and low-income populations overwhelmingly prefer Proposal 3; and (3) Metro will provide supplemental bus service that will mitigate some of the rail service changes that have an adverse impact on minority and low-income riders.

For additional information, see Attachment A for the "Title VI Equity Analysis – Span of Service Changes."

Metrobus Supplemental Service

In order to provide lifeline bus services as an alternative to Metrorail, and to help mitigate any adverse impacts on low-income and minority rail customers, management recomends Metrobus service changes that close gaps created within the bus network by Proposal 3 and augment some lines for capacity.

Lifeline Network Access Service Plan

- Improves late evening Metrobus service coverage by building on the existing network by filling in missing linkages to suburban transit centers.
- Adds a limited number of trips on high ridership corridors in response to crowding
- Estimated annual cost: $2 million (Weekdays, weekend evenings and Sunday morning)
- Estimated bus requirement: 40
- Estimated FTE bus operators: 35

While the Lifeline Network Access Service Plan does add trips along high ridership corridors in response to crowding, capacity on Metrobus is still limited relative to Metrorail.

For additional information, see Attachment C for a service plan and map of the Lifeline Network Access Service Plan.

FUNDING IMPACT:

The net reduction to the operating budget for changes to Metrorail service outlined in Proposal 3 is estimated at $2.55 Million. This includes a $6.84 Million reduction in Operating Expenses (Personnel, Propulsion and other utilities) LESS Revenue loss of $4.3 Million (1.5 Million trips). The budget for the recommended additional Metrobus service is estimated at $2 million annually and an increase of 35 positions in the Department of Bus Services. Funding for additional Metrobus service is not included in the FY2017 Approved Operating Budget or FY2018 Proposed Operating Budget. If the Board approves the Metrobus "Lifeline Network Access Service Plan", reductions in other bus service routes, offsetting expense reductions, or an increase in subsidy will need to be identified.

Project Manager:	Joe Leader
Project Department/Office:	Chief Operating Officer

TIMELINE:

Previous Actions	• June 2016: Midnight Metrorail system closings went into effect under SafeTrack plan • October 2016: Public comment period and public hearing conducted on Metrorail Span of Service
Anticipated actions after presentation	• July 1, 2017: Metrorail and Metrobus "Span of Service" changes take effect

RECOMMENDATION:

Metro staff recommends the following:

- Approval of Proposal 3 to adjust the Metrorail operating hours, beginning July 1, 2017, as follows:

Proposal 3	
Mon-Thu	5am-11:30pm
Fri	5am-1am
Sat	7am-1am
Sun	8am-11pm

- Approval of the Metrobus “Lifeline Network Access Service Plan”
- Approval of the “Title VI Equity Analysis – Span of Service Changes”
- Quarterly reporting to the Customer Service, Operations and Security Committee beginning in FY18 on Metro’s progress on repairs to the rail system, and in conjunction with the Metro Safety Committee, whether an additional eight hours of track maintenance time each week is needed beyond FY19 to ensure safe and effective rail service

PRESENTED AND ADOPTED: December 15, 2016

SUBJECT: APPROVAL OF METRORAIL SPAN OF SERVICE AND SUPPLEMENTAL BUS SERVICE RECOMMENDATIONS AND TITLE VI EQUITY ANALYSIS

2016-52

RESOLUTION
OF THE
BOARD OF DIRECTORS
OF THE
WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

WHEREAS, The Washington Metropolitan Area Transit Authority (WMATA) is working on a long-term preventive maintenance strategy to sustain the progress of SafeTrack and address the Federal Transit Administration (FTA) recommendations, which requires providing more maintenance track time; and

WHEREAS, Resolution 2016-40 authorized staff to conduct a public hearing on four Metrorail span of service proposals, each of which would provide an additional eight hours of track maintenance time each week to ensure safe and effective rail service; and

WHEREAS, Staff and the Board of Directors conducted a public hearing on October 20, 2016, and staff also conducted in-station outreach events, targeted marketing and media, and an open house, resulting in over 15,900 comments, including surveys, emails, and comments received during the public hearing, which are summarized in Attachment B; and

WHEREAS, Public input revealed that Proposal 3 – which would adjust the Metrorail operating hours by closing the system at 11:30 p.m. on Monday through Thursday, closing at 1:00 a.m. on Friday and Saturday nights, and operating from 8:00 a.m. to 11:00 p.m. on Sunday – is overwhelmingly preferred by rail riders, including minority and low-income riders who are directly impacted by Proposal 3; and

WHEREAS, Staff anticipates that additional riders will use the Metrobus system for travel during the reduced service periods of Proposal 3, and therefore recommends implementing the Lifeline Network Access Service Plan, presented in Attachment C, which will improve late evening Metrobus service coverage; and

WHEREAS, As required by Title VI of the Civil Rights Act of 1964 and FTA Circular 4702.1B, staff has conducted an analysis and determined that Proposal 3 results in a disparate impact on minority populations and a disproportionate burden on low-income populations; and

Motioned by Mrs. Hudgins, seconded by Ms. Carmody
Ayes: 8 – Mr. Evans, Ms. Harley, Mr. Corcoran, Mr. Strickland, Mr. Price, Mr. Goldman, Mrs. Hudgins and Ms. Carmody

WHEREAS, Although Proposal 3 creates a disparate impact and disproportionate burden and there appears to be a less discriminatory alternative, staff nonetheless has determined that implementing Proposal 3 is consistent with Title VI or Environmental Justice requirements because: (1) Metro has a substantial legitimate justification for the proposed service change; (2) practically speaking, no less discriminatory alternative exists because minority and low-income populations overwhelmingly prefer Proposal 3; and (3) the Lifeline Network Access Service Plan will mitigate the adverse impact on minority and low-income riders; and

WHEREAS, Staff recommends that the Board of Directors approve the Public Outreach & Input Report and Title VI analysis and approve Proposal 3, adjusting the Metrorail operating hours as follows, Monday – Thursday: 5:00 a.m. to 11:30 p.m.; Friday: 5:00 a.m. to 1:00 a.m.; Saturday: 7:00 a.m. to 1:00 a.m.; and Sunday: 8:00 a.m. to 11:00 p.m., effective July 1, 2017; now, therefore be it

RESOLVED, That the Board of Directors approves the Public Outreach & Input Report in Attachment B, which shows that Proposal 3 is overwhelmingly preferred by rail riders, including minority and low-income riders; and be it further

RESOLVED, That the Board of Directors approves the Title VI equity analysis in Attachment A, which demonstrates that implementing Proposal 3 is consistent with Title VI or Environmental Justice; and be it further

RESOLVED, That the Board of Directors approves Proposal 3 to adjust the Metrorail operating hours as follows: Monday - Thursday: 5:00 a.m. to 11:30 p.m.; Friday: 5:00 a.m. to 1:00 a.m.; Saturday: 7:00 a.m. to 1:00 a.m.; and Sunday: 8:00 a.m. to 11:00 p.m., effective July 1, 2017; and be it further

RESOLVED, That the Board of Directors approves the Lifeline Network Access Service Plan in Attachment C, which will provide supplemental bus service to mitigate the adverse impact of the rail service changes when implementing Proposal 3; and be it further

RESOLVED, That the Board of Directors directs staff to report to the Customer Service, Operations and Security Committee on a quarterly basis, beginning in FY18, Metro's progress on its repairs to the rail system, to include a matrix of the maintenance performed pre-SafeTrack, during the adjusted hours, and projected beyond FY19 along with the correlating impact on safety and reliability in order to allow the Customer Service Operations and Security Committee to compare the effects of the additional track-access hours on rail system safety and reliability, and in conjunction with the Metro Safety Committee, determine whether additional hours of track maintenance time each week is needed beyond FY19 to ensure safe and reliable rail service; and be it further

RESOLVED, That the Board of Directors directs the General Manager to provide a comprehensive report of the Preventative Maintenance Program progress to the full Board in May 2018, and declares a continuation of the reduced span of service for FY19; and be it further

RESOLVED, That on July 1, 2019, the Metrorail operating hours shall revert to Monday - Thursday: 5:00 a.m. to 12:00 a.m.; Friday: 5:00 a.m. to 3:00 a.m.; Saturday: 7:00 a.m. to 3:00 a.m.; and Sunday: 7:00 a.m. to 12:00 a.m., unless based on the quarterly staff reports, the Board of Director takes further action; and be it finally

RESOLVED, That this Resolution shall be effective 30 days after adoption in accordance with § 8(b) of the WMATA Compact.

Reviewed as to form and legal sufficiency,

Patricia Y. Lee
General Counsel

WMATA File Structure No.:
20.5.1 Rail Scheduling

M E M O R A N D U M

SUBJECT: Title VI Equity Analysis – Span of Service Changes

DATE: November 23, 2016

FROM: FAIR – James T. Wynne, Jr

TO: GM/CEO – Paul J. Wiedefeld

This memorandum discusses the Title VI analysis conducted for Metro's proposed rail span of service changes that are required for maintenance of the rail system as mandated by the FTA and NTSB.

I. Conclusion

Metro staff recommends implementing the rail span of service changes presented in Proposal 3 and the Lifeline Network Access supplemental bus service plan. Proposal 3 will result in a disparate impact (DI) on minority populations and a disproportionate burden (DB) on low-income populations and there appears to be a less discriminatory alternative to Proposal 3 which is contrary to public input. Proposal 3 is overwhelmingly preferred by rail riders, including minority and low-income riders. Thus, implementing Proposal 3 does not violate Title VI or Environmental Justice (EJ) because: (1) Metro has a substantial legitimate justification for the proposed service change; (2) practically speaking, no less discriminatory alternative exists because minority and low-income populations overwhelmingly prefer Proposal 3; and (3) Metro will provide supplemental bus service that will offset some of the rail service changes.

II. Rail Service Change Proposal

In order to provide safe and reliable rail service, Metro needs a minimum of eight additional hours a week of track time to rehabilitate and maintain the rail system. Accordingly, Metro must reduce its span of service to accommodate an additional eight hour maintenance window. In September 2016, Metro presented the following four span of service proposals on the public docket:

Table 1: Four Service Proposals

Current Service Hours (not a proposal)	Monday through Thursday: 5:00 a.m. to midnight Friday: 5:00 a.m. to 3:00 a.m. Saturday: 7:00 a.m. to 3:00 a.m. Sunday: 7:00 a.m. to midnight
Proposal 1	Reducing late night service to midnight on Friday and Saturday; Closing at 10:00 p.m. on Sunday.

Washington Metropolitan Area Transit Authority

Proposal 2	Reducing late night service to midnight on Friday and Saturday; Closing at 11:30 p.m. Sunday through Thursday.
Proposal 3	Reducing late night service to 1:00 a.m. on Friday and Saturday; Closing at 11:30 p.m. Monday through Thursday; Starting morning service at 8:00 a.m. and closing at 11:00 p.m. on Sunday.
Proposal 4	Maintaining late night service until midnight on Monday through Thursday; Maintaining late night service until 3:00 a.m. on Friday and Saturday; Starting morning service at 9:00 a.m. on Saturday; Starting morning service at 12:00 p.m. and closing at 11:00 p.m. on Sunday.

III. Title VI Analysis

When a transit agency proposes a major service change, the Federal Transit Administration (FTA), in its Title VI Circular 4702.1B, requires that the transit agency conduct an equity analysis to determine whether the service change will result in a DI on minority riders or a DB on low-income riders.

In conducting the equity analysis, Metro used the following survey data to determine which populations would be affected by each proposed service change:

- 2016 Travel Trends Rail Passenger Survey (Spring, 2016);
- Supplemental Sunday survey data collected August to October 2016;
- Metrorail ridership data collected June 2015 to May 2016; and
- Results from public outreach (Fall 2016)

Because the proposed service change affects rail customers, Metro calculated the impacted minority or low-income trips as a percentage of all impacted rail trips. Metro then compared that percentage to the system-wide ridership profile for Metrorail (45% minority; 12.8% low-income) (See Table 3).

As shown in Table 4, the percentage of impacted minority riders varies considerably between different service periods, ranging from 37.0% to 79.8%. Table 4 shows that Friday and Saturday late night service have a low proportion of minority riders while Sunday morning, Sunday evening, and weekday evening service have a high proportion of minority riders. All of the proposed off-peak service periods have a high proportion of low-income riders. Table 4 shows why Proposals 1 and 2, which reduce late night service, only result in a DB, but not a

DI, as shown in Table 5. Table 4, however, shows why Proposals 3 and 4, which reduce Sunday morning and Sunday evening service, result in both a DI and DB as shown in Table 5.

Metro applied the impacted ridership statistics in Table 4 to determine the total number of riders impacted on a daily basis. To determine the daily impacted ridership, Metro selected the day with the highest number of affected riders for each proposal. For instance, Metro found that for Proposal 3 the highest number of riders will be affected on Sunday. Specifically, the annual ridership impacted by opening the system on Sunday at 8 a.m. rather than 7 a.m. is approximately 261,000 riders. The annual ridership impacted by closing the system on Sunday at 11 p.m., rather than 12:00 a.m. is approximately 153,000 riders. Over the course of the year, that results in approximately 8,120 impacted riders per day. Metro then applied the 8,120 daily riders impacted to the DI/DB thresholds in Table 2, which were adopted by the Board of Directors in Resolution 2013-27. This yielded an 8% DI/DB threshold. For more information about how Metro determined the DI/DB thresholds for each proposal, please refer to the spreadsheet in Attachment 1.

Finally, Metro applied the impacted riders in Table 4 and the DI/DB thresholds in Table 2 to determine, in Table 5, whether the percentage of affected minority and low-income riders exceeded the system-wide average by more than Metro's DI/DB thresholds. As shown in Table 5, Proposals 1 and 2 do not result in a DI on minority riders, but do result in a DB on low-income riders. Proposals 3 and 4 result in both a DI and a DB.

Table 2: DI/DB Threshold

Total Daily Riders Impacted	Threshold for Significant Disparity
Up to 10,000	8%
10,001 to 20,000	7%
20,001 to 40,000	6%
Over 40,000	5%

Table 3: Metro Ridership Rail Demographic Profile[1]

	Annual Ridership (FY 2016)	% Minority Ridership	% Low Income Ridership	Annual Minority Trips	Annual Low Income Trips
Rail	191,347,600	**45.0%**	**12.8%**	86,065,916	24,567,857

Table 4: Impacted Ridership and Demographics by Time Period

	Annual Ridership Impacted	Minority % of impacted trips	Low Income % of impacted trips	Proposal
Rail System		**45.0%**	**12.8%**	
Saturday midnight-3am	429,000	37.0%	19.1%	1, 2, 3*
Mon-Thu 11:30-midnight	318,000	48.8%	21.8%	3
Friday midnight-3am	425,000	49.8%	22.5%	1, 2, 3*
Sun-Thu 11:30pm-midnight	397,000	52.4%	25.7%	2
Saturdays 7-9am	944,063	56.3%	29.4%	4
Sundays 7am-noon	2,507,016	64.0%	33.2%	4
Sunday 10pm-midnight	428,000	66.9%	41.3%	1, 3*, 4*
Sundays 7-8am	261,000	79.8%	41.3%	3

Table 5: DI/DB Test for Each Proposal

	Minority	Low-Income
System Average	**45.0%**	**12.8%**
Proposal One		
Impacted Ratio	51.2%	27.6%
Difference from System Average	**6.2%**	**14.8%**
Threshold	8.0%	8.0%
Disparate Impact/Disproportionate Burden	**No**	**Yes**

[1] Based on 2016 Rail Passenger Survey; special Sunday rail data collection (Aug/Sept 2016); and 2014 Metrobus Passenger Survey

Proposal Two		
Impacted Ratio	46.2%	22.3%
Difference from System Average	**1.3%**	**9.5%**
Threshold	8.0%	8.0%
Disparate Impact/Disproportionate Burden	**No**	**Yes**
Proposal Three		
Impacted Ratio	56.0%	28.3%
Difference from System Average	11.1%	15.5%
Threshold	**8.0**	**8.0**
Disparate Impact/Disproportionate Burden	**Yes**	**Yes**
Proposal Four		
Impacted Ratio	62.1%	32.5%
Difference from System Average	**17.1%**	**19.7%**
Threshold	5.0%	5.0%
Disparate Impact/Disproportionate Burden	**Yes**	**Yes**

IV. Disparate Impact Legal Test

A. Title VI and EJ Circular Requirements

Proposal 3 was overwhelmingly preferred by rail riders, including minority and low-income riders and, therefore, Metro staff recommends implementing Proposal 3. Even though Proposal 3 will result in a DI on minority populations and a DB on low-income populations, implementing this service change would not violate Title VI or EJ. Pursuant to FTA Title VI Circular, Metro may implement a proposed service change that will result in a disparate impact on minority populations only if Metro:

(1) has a substantial and legitimate justification for the proposed change; and

(2) can show that there are no alternatives that would have a less disparate impact on minority riders but would still accomplish its goals. To make this showing, Metro must consider and analyze alternatives to determine

whether those alternatives would have a less disparate impact on minority populations, and then implement the least discriminatory alternative. See, Chapter IV-16 of the FTA Title VI Circular.

Under Title VI and EJ, Metro may implement a proposed service change that will result in a disproportionate burden on low-income populations only if Metro implements practicable mitigation measures—unless no practicable measures exist. When determining whether mitigation measures are practicable, Metro must consider the social, economic (including costs), and environmental effects of mitigating the adverse effects on low-income populations. Pg. 5 of the FTA EJ Circular.

B. Legal Analysis

Although Proposal 3 results in a DI and DB, implementing this service change would not violate Title VI or EJ because: (1) Metro has a substantial legitimate justification for the proposed service change; (2) practically speaking, no less discriminatory alternative exists because minority and low-income populations overwhelmingly prefer Proposal 3; and (3) Metro will provide supplemental bus service that will offset some of the rail service changes.

i. Substantial Legitimate Justification

Metro must reduce its span of service to: (1) provide work crews with additional time to rehabilitate and maintain the rail system in order to provide safe and effective rail service; and (2) minimize the number of riders affected by Metro's rehabilitation plan.

Currently, on Sundays through Thursdays, Metro has five hours of non-passenger service, which enables Metro crews to perform two to three hours of productive rehabilitation work per day. On Fridays and Saturdays, prior to implementing SafeTrack, Metro had four hours of non-passenger service, which yielded approximately one hour of productive rehabilitation work per day. Unfortunately, this is an insufficient amount of track time for Metro to complete its rehabilitation plan. Metro requires an additional eight hours of non-passenger service per week to effectively and efficiently rehabilitate the rail system. Implementing Proposal 3 creates the additional non-passenger time needed for new preventative maintenance programs, quality control and quality assurance, and other basic maintenance tasks. For more information about Metro's need for additional rehabilitation time, please refer to the enclosed Overnight Maintenance Window MEAD presented to the Metro Board of Directors' Customer Service, Operations and Security Committee on November 3, 2016 (Attachment 2).

Additionally, to effectively and efficiently rehabilitate the rail system, Metro

must close the complete rail system rather than segment line closures. Metro must perform maintenance throughout the system during its non-passenger service hours. For instance, the Radio Project, which will replace Metro's aging radio system to improve communications reliability, requires extensive track access for heavy vehicles to continuously move along the track. Moreover, closing the entire system during off-peak hours minimizes the number of riders affected by the rehabilitation plan. For example, Proposal 3 impacts approximately 1.2 million trips, which is only 0.6% of Metro's annual rail trips. In other words, closing the entire system during non-peak hours enables Metro to discontinue its SafeTrack practice of segmenting line closures during peak hours.

ii. No Less Discriminatory Alternative

Proposal 3 is the least discriminatory proposal that enables Metro to achieve its system rehabilitation goals. As discussed above, Metro can achieve its goals only if it has an additional eight hours of track access per week for the entire rail system at low ridership times. Limited by these parameters, Metro presented four proposals to the public.

As mentioned above, Proposals 1 and 2 do not create a disparate impact and still enable Metro to achieve its rehabilitation goals. Thus, at first glance, it appears that Proposals 1 and 2 would be less discriminatory than Proposal 3. Metro's extensive public participation revealed, however, that Proposals 1 and 2 would not in practice be less discriminatory because the riding public, including low-income and minority riders, overwhelmingly prefer Proposal 3.

Metro received over 15,900 comments during the public comment period spanning from October 1 through October 25, 2016. During this period, Metro conducted in-station outreach efforts, targeted marketing and media, and held an open house and public hearing. Feedback was collected through surveys available online, at in-station outreach events, and through community-based organizations. Metro also accepted written comments via email and public testimony during the public hearing. Outreach street teams traveled to various Metrorail stations to collect feedback from riders on paper surveys and distribute brochures. Metro chose its outreach dates and times to correspond with the highest ridership during the proposed span of service cuts. Additionally, materials and surveys were provided in seven languages. For a more detailed summary of the outreach conducted for the service change proposals, please refer to the enclosed Staff Summary Outreach Report. (Attachment 3)

Metro received 15,163 completed surveys about the four service change proposals. 37% of the surveys were completed by minority populations and 15% were completed by low-income populations, which closely mirrors the system-wide rail demographics (45% minority and 12.8% low-income). As shown in Table 6,

respondents (45%), including low-income (44%) and minority populations (44%), overwhelmingly prefer Proposal 3.

Moreover, those minority and low-income populations who are directly impacted by Proposal 3 still overwhelmingly prefer Proposal 3. Metro's survey asked customers if they had used Metrorail or Metrobus during three proposed span of service reductions (after midnight; between 10 p.m. and midnight; and between 5 a.m. and 9 a.m. on Saturdays and Sundays) in the last seven days. 41% of the 15,163 respondents traveled during at least two of the three time periods. As shown in Table 7, 44% of minority respondents and 53% of low-income respondents traveled during at least two of the three time periods. 44% of those impacted minority riders and 46% of those impacted low-income riders still preferred Proposal 3. Thus, even minority and low-income populations who will be impacted by Proposal 3 still overwhelmingly prefer that proposal. Moreover, although Proposals 1 and 2 do not result in a disparate impact under Title VI, those two proposals were the least attractive to minority and low-income populations.

The FTA Title VI Circular is silent on how to resolve a conflict between (1) the rail passenger survey data showing that a proposed change will result in a disparate impact on a protected population and (2) the public survey data showing that the protected population prefers that proposed change to other alternative service changes that will not result in a disparate impact. Metro, therefore, applied basic Title VI principles to help inform its decision. In general, Title VI prohibits entities from discriminating against protected populations under any program receiving Federal financial assistance. Title VI of the Civil Rights Act of 1964, 42 U.S.C. § 2000. To ensure that a program is non-discriminatory, transit agencies, such as Metro, must provide protected populations with a meaningful opportunity for public comment to ensure that such populations are not subject to discrimination when a major service change is proposed. FTA Title VI Circular, Chapter IV-16.

Metro believes that the least discriminatory option is Proposal 3, because it is overwhelmingly favored by both minority and low-income populations, rather than Proposal 1 or 2, which are the least preferred options for these same populations.

Table 6: Overall Preferences

Proposals	Overall Preference-All Respondents	Overall Minority Preference	Overall Low Income Preference
Proposal 1	17%	18%	15%
Proposal 2	15%	16%	15%
Proposal 3	**45%**	**44%**	**44%**
Proposal 4	23%	22%	25%

Table 7: Proposal 3- Impacted Minority and Low-Income Preferences

Populations	Percentage of minority/low income populations who traveled during at least two of the three time periods	Percentage of minority/low income populations who prefer each Proposal even though they traveled during at least two of the three time periods			
		Proposal 1	Proposal 2	Proposal 3	Proposal 4
Minority populations	44%	15%	15%	44%	26%
Low-income populations	53%	13%	13%	46%	28%

iii. Practicable Mitigation Measures

1. Existing Bus Service

Metro's existing bus service will offset some of the adverse effects borne by minority and low-income populations. To assess how many displaced trips could be accommodated by the bus network, Metro used a schedule database query tool to identify bus-only travel options between every rail station origin-destination pair. As shown in Table 8, each station pair was then categorized according to whether the bus substitute was "Acceptable," "Inferior," or "Nonexistent":

Table 8: Definitions for Bus Substitute Availability

Availability of Bus Itinerary	**Criteria**
Acceptable Substitute	• No transfers required AND • Total bus trip time ≤90 minutes AND • Total bus trip time ≤150% of rail trip time OR total travel time < 30 minutes
Inferior Substitute	Bus alternative exists but does not meet the criteria for "Acceptable"
Nonexistent	No bus itinerary exists

For each of the four service change proposals, ridership counts for each station pair were assigned to one of the categories listed above.

For each rail service proposal, approximately 20% of impacted customers would have an "Acceptable" bus alternative. Customers traveling later at night, when fewer bus routes are in operation, are more likely to have no bus itinerary available. Impacted trips during the morning periods were more likely to have an option available, even if that option was deemed "Inferior." For Proposal 3, approximately 1.2 million annual trips will be impacted, of which approximately 225,000 trips would have an "acceptable" bus option, approximately 600,000 would have an "inferior" bus option, and approximately 340,000 would not have any bus option.

Table 9: Share of Impacted Trips with Available Bus Alternative

	Acceptable	Inferior	No Alternative
Proposal 1	21%	37%	43%
Proposal 2	21%	39%	41%
Proposal 3	19%	52%	29%
Proposal 4	23%	65%	12%

2. Supplemental Bus Service

Metro proposes implementing supplemental bus service as a mitigation measure to offset the rail service changes. Metro asked the public which alternative mode of travel they would most likely use when Metrorail is not in service. As shown in Table 10, out of approximately 15,000 respondents, only 15% stated they would use Metrobus as their primary option and 33% stated that they would never consider Metrobus as an alternative. 23% of minorities and 27% of low-income passengers said they would use Metrobus as their primary option. Survey respondents stated that they preferred the following alternatives over Metrobus: Taxis, Uber, and Lyft (44%); car or carpooling (22%); and not making the trip or traveling at other times (22%).

A higher percentage of survey respondents stated, however, that they might consider using Metrobus as a secondary option. Specifically, respondents who stated that Metrobus would not be their primary alternative were then asked the following question: “If there was a Metrobus option that served your trip needs during those eight hours, would you consider taking it?” Approximately 52% of all survey respondents, including 46% of minorities and 51% of low-income respondents, answered “yes.” Those respondents are listed as secondary bus users in Table 10. Thus, over 70% of all survey participants, including minority and low-income riders, would consider using Metrobus as an alternative mode of transportation. Note that the Lifeline Network is developed as just that, a lifeline, but the capacity of the service will not be able to meet demand if all 70% opted to use it.

As a result, Metro staff proposes implementing the Lifeline Network Access Metrobus Service Plan (“Lifeline Plan”). This plan will improve late evening Metrobus service by providing linkages to suburban transit centers, and adding a limited number of trips on high ridership corridors in response to crowding. As shown in Table 11, this plan will increase the number of Acceptable trips from 19% to 20%, Inferior Trips from 52% to 65% and reduce the No Alternatives from 29% to 16%. This plan requires an additional 40 buses, 35 full-time bus operators, and will cost Metro around $2 million annually. For a detailed schedule and map of the proposed Lifeline Plan, please refer to Attachment 4.

Metro also examined whether it could practicably provide more robust supplemental bus service through its proposed Comprehensive Network Access Service Plan (“Comprehensive Plan”). This plan would reestablish connections throughout the regional bus network and enhance capacity and service along high ridership rail and bus corridors. For a detailed schedule and a map of the Comprehensive Service Plan, please refer to Attachment 5.

Metro has determined, however, that implementing the Comprehensive Plan is not practicable because it is twice the cost and no better. The Comprehensive Plan is expensive, requiring 70 additional full-time bus operators and costing Metro approximately $4 million per year. Moreover, as shown in Table 12, this service would generally be no more effective than the Lifeline Plan in providing additional service routes to low-income and minority populations.

Table 10: Bus User Preferences

Bus User Type	Total	Greatly Impacted	Minority	Low Income
Primary	15%	29%	23%	27%
Secondary	52%	50%	46%	51%
Non-User	33%	20%	30%	22%
n=	*14,992*	*1,528*	*5,610*	*2,308*

Table 11: Share of Impacted Trips with Available Bus Alternative – Lifeline Service Plan

	Acceptable	Inferior	No Alternative
Proposal 1	21%	56%	23%
Proposal 2	21%	58%	21%
Proposal 3	**20%**	**65%**	**16%**
Proposal 4	22%	67%	11%

Table 12: Share of Impacted Trips with Available Bus Alternative – Enhanced Network

	Acceptable	Inferior	No Alternative
Proposal 1	22%	57%	21%
Proposal 2	22%	59%	19%
Proposal 3	**20%**	**66%**	**14%**
Proposal 4	23%	69%	8%

As stated in Section III.A, Metro is not required to implement mitigation measures that are not practicable. When determining whether mitigation measures are practicable, Metro must consider the social, economic (including costs), and environmental effects of mitigating the adverse effects on low-income populations. Pg. 5 of the FTA EJ Circular. Although not specified in the Circular, a mitigation measure will generally not be practicable if, among other things, it: (1) costs a significant amount of money, which cannot feasibly be covered under Metro's budget; (2) requires an unreasonable number of personnel or work hours to implement such measures; or (3) implementing the mitigation strategy would not

meaningfully offset the adverse impacts borne by minority and low-income populations.

In this case, the Comprehensive Plan is not a practicable mitigation measure because: (1) the degree of mitigation – as measured by the increase in "Acceptable" bus alternatives and reduction of riders with "No Alternative" to rail service – is almost identical to what can be accomplished through the less costly Lifeline Plan; and (2) the plan requires Metro to hire 70 additional bus operators and will cost Metro $4 million dollars per year, which is not cost effective given the marginal improvement to impacted populations and Metro's $300 million shortfall. Accordingly, Metro has determined that the Lifeline Plan is the most practicable mitigation proposal because if offers the bus service most needed for Metro riders, including low-income and minority riders.

For all of the reasons discussed above, even though Proposal 3 will result in a DI on minority populations and a DB on low-income populations, implementing this proposal is consistent with Title VI and EJ principles. Staff, therefore, recommends Proposal 3 because it is the proposal overwhelmingly preferred by rail riders, including minority and low-income riders. Metro also recommends implementing the Lifeline Plan as a practicable mitigation measure.

Washington Metropolitan Area Transit Authority
Public Outreach & Input Report

Docket B16-03: Change of Metrorail Operating Hours

INTRODUCTION

Prior to June 2016, Metrorail was closed for 33 hours each week which provided little time for preventative maintenance and inspections. When the emergency SafeTrack maintenance program began in June 2016 to address the worst track conditions and assure safety, Metrorail hours were temporarily changed on Friday and Saturday nights from closing at 3:00 a.m. to midnight. This accommodated the track access needed during the SafeTrack program.

Consistent with recommendations from federal safety oversight agencies, including the Federal Transit Administration (FTA) and National Transportation Safety Board (NTSB), Metro received approval from its Board of Directors to gather public input on four proposals for new operating hours that would provide at least 8 additional hours of track access each week for new preventative maintenance program that would advance system safety and reliability.

	PROPOSAL #1 *PROPUESTA #1*	**PROPOSAL #2** *PROPUESTA #2*	**PROPOSAL #3** *PROPUESTA #3*	**PROPOSAL #4** *PROPUESTA #4*
Mon-Thu *lunes-jueves*	5:00 a.m. – midnight *medianoche*	5:00 a.m. – 11:30 p.m.	5:00 a.m. – 11:30 p.m.	5:00 a.m. – midnight *medianoche*
Fri *viernes*	5:00 a.m. – midnight *medianoche*	5:00 a.m. – midnight *medianoche*	5:00 a.m. – 1:00 a.m.	5:00 a.m. – 3:00 a.m.
Sat *sábado*	7:00 a.m. – midnight *medianoche*	7:00 a.m. – midnight *medianoche*	7:00 a.m. – 1:00 a.m.	9:00 a.m. – 3:00 a.m.
Sun *domingo*	7:00 a.m. – 10:00 p.m.	7:00 a.m. – 11:30 p.m.	8:00 a.m. – 11:00 p.m.	Noon – 11:00 p.m.

This report includes an overview of the public participation plan that was followed, as well as a summary of the feedback received from the public from various information channels.

COMMUNICATIONS & OUTREACH TO THE PUBLIC

In order to encourage public feedback on the proposals, as well as to fulfill the Board-approved Public Participation Plan, Metro tailored a communications and outreach plan. The plan focused on the customers most impacted by the operating hours proposals — with an emphasis on riders traveling during affected periods, minority and low income populations. This intensive effort was necessary for reaching passengers and communities most impacted by the proposals; the historical model of numerous public hearings often missed impacted groups.

The majority of the communications and outreach effort concentrated on the public comment time period – Saturday, October 1 through Tuesday, October 25.The final plan included the following efforts:

- In-station outreach events
- Stakeholder communications
- Targeted marketing & media
- Open house & public hearing

In order to best manage resources in the allotted amount of time, the majority of outreach efforts focused on the proposed changes that would have the greatest impact on riders (high ridership, Title VI

populations). A demographic overview of the impacted customers can be viewed in Part I of the Title VI equity analysis report.

Feedback was collected through the following sources:

- Paper surveys in English and Spanish at in-station outreach events
- Paper surveys in English and Spanish from Community Based Organizations & the Open House
- Online Amplify survey in English
- Online survey in English and Spanish
- Written comments from WrittenTestimony@wmata.com emails and
- Verbal public testimony during the Public Hearing

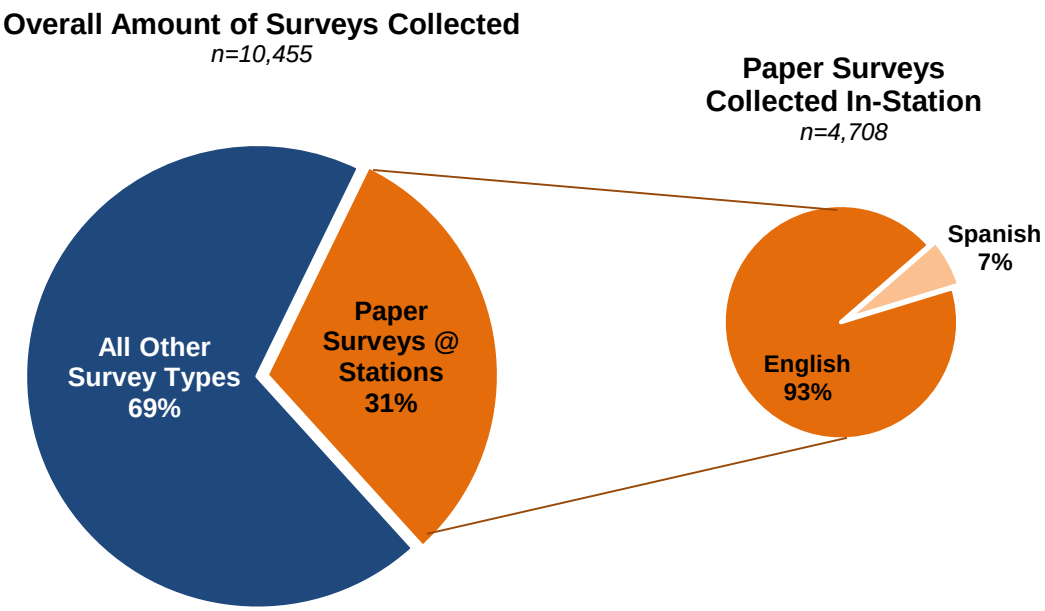
In-Station Outreach Events

Outreach street teams, comprised of Metro staff and contractors, traveled to various Metrorail stations for a total of 40 shifts to collect feedback from riders on paper surveys and pass out brochures. Dates and times were chosen based on a variety of factors, including highest ridership during proposed cut hours, highest ridership prior to cut midnight hours, Title VI populations, and top bus transfer locations.

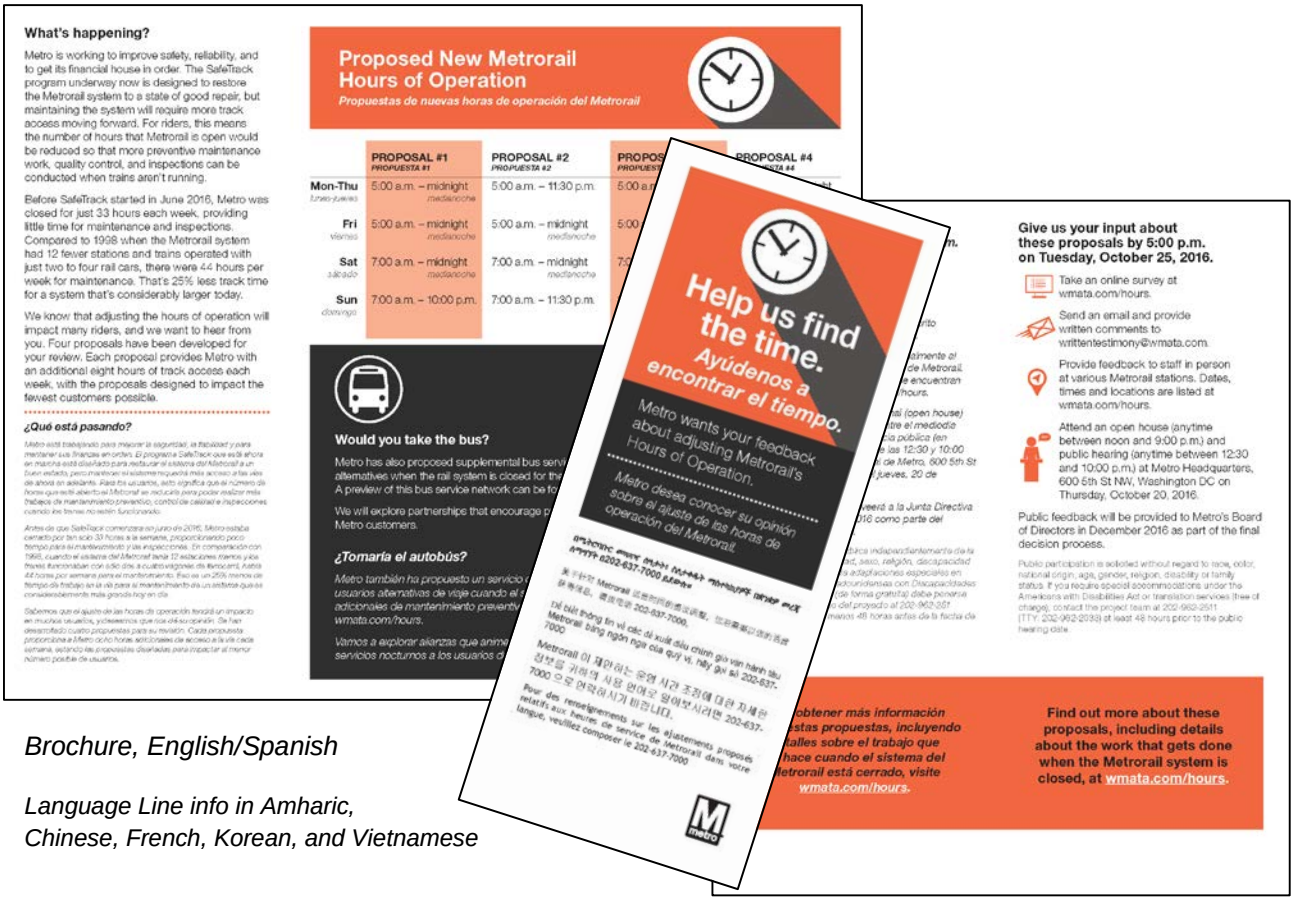
Team members wore Metro aprons and those who were bilingual wore large pins that identified them as speaking another language. Half of all street teams were fluent in Spanish, and some teams also had Amharic and Chinese speakers. The brochures and surveys were both in English and Spanish.

Over 10,750 brochures were distributed during the 40 shifts, and 4,708 surveys were collected, 7% in Spanish. Paper surveys collected in stations accounted for 31% of all surveys collected, and 29% of all feedback sources.

# of outreach shifts	# of outreach hours	# of brochures distributed	# of paper surveys completed	% of paper surveys completed in Spanish
40	168	10,766	4,708	7%

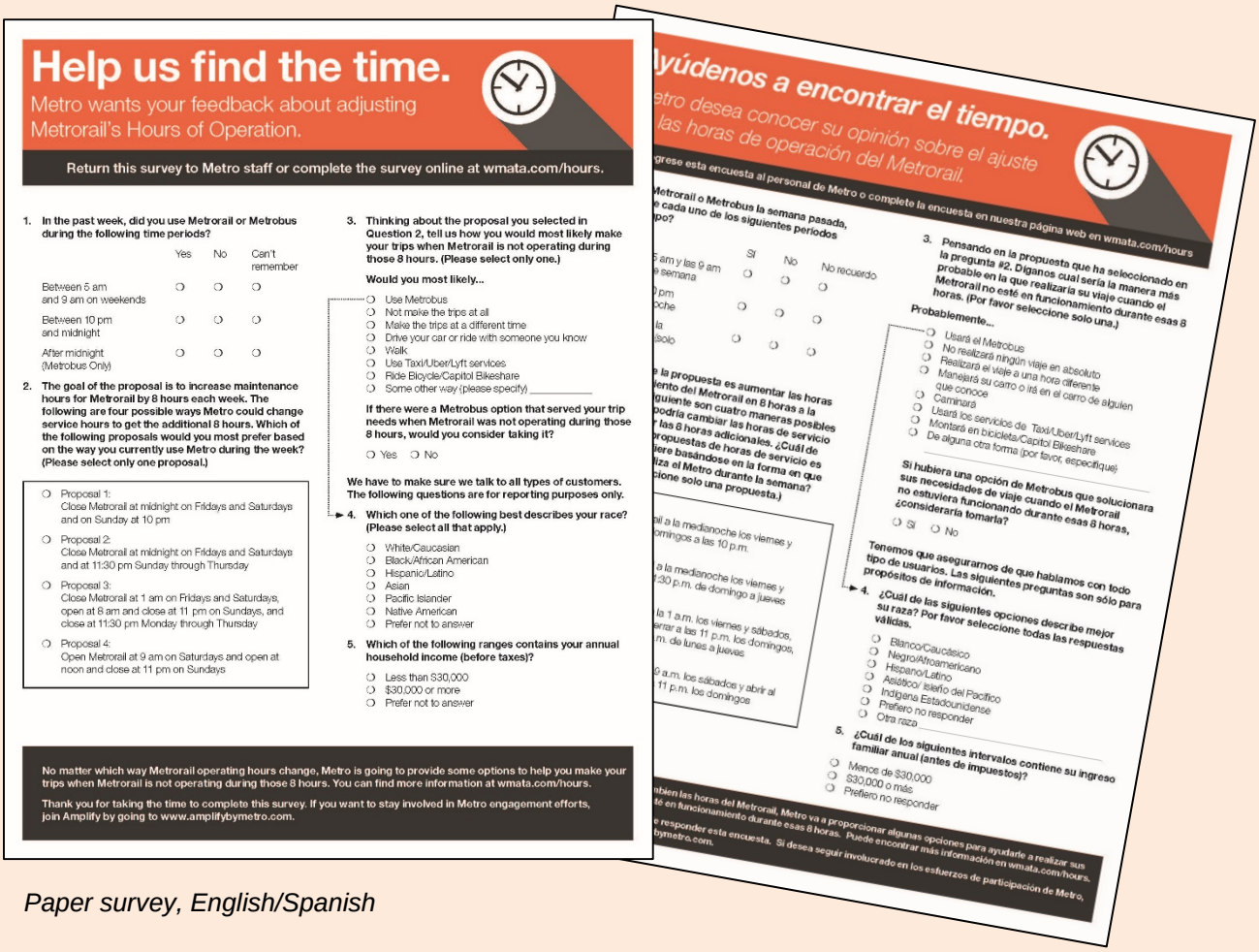


In-Station Outreach Shift Results					
Date	**Time of Shift**	**Metrorail Stations**	**# of Brochures Distributed**	**# of paper surveys (English)**	**# of paper surveys (Spanish)**
Friday, October 7, 2016	8:00 p.m. – midnight	Metro Center, Dupont Circle, Foggy Bottom, Farragut North	1,400	762	37
Saturday, October 8, 2016	7:00 – 11:00 a.m.	Fort Totten, Shady Grove, Silver Spring, West Hyattsville	750	427	104
Saturday, October 8, 2016	8:00 p.m. – midnight	Clarendon, Columbia Heights, Gallery Place, U Street	605	438	10
Sunday, October 9, 2016	7:00 a.m. – noon	Anacostia, Columbia Heights, Metro Center, Southern Ave	350	578	28
Sunday, October 9, 2016	8:00 p.m. – midnight	Dupont Circle, Foggy Bottom, Silver Spring, Union Station	865	362	17
Friday, October 14, 2016	8:00 p.m. – midnight	Fort Totten, Gallery Place, U Street, Union Station	767	566	36
Saturday, October 15, 2016	7:00 – 11:00 a.m.	Anacostia, Columbia Heights, Crystal City, Southern Ave	583	304	36
Saturday, October 15, 2016	8:00 p.m. – midnight	Dupont Circle, Foggy Bottom, Metro Center, Silver Spring	1,582	499	21
Sunday, October 16, 2016	7:00 a.m. – noon	Fort Totten, Pentagon City, Rosslyn, Silver Spring	2,224	126	17
Sunday, October 16, 2016	8:00 p.m. – midnight	Columbia Heights, Gallery Place, Metro Center, National Airport	1,650	262	7
		Total	***10,776***	***4,394***	***314***



Brochure, English/Spanish

Language Line info in Amharic, Chinese, French, Korean, and Vietnamese



Paper survey, English/Spanish

Stakeholder Communication

Local stakeholders helped spread the word and encouraged feedback from their constituents about the proposed changes of Metrorail hours.

- Metro's Accessibility Advisory Committee (AAC) held robust discussions on the proposed adjustments to Metrorail's operating hours during both the October AAC meeting and the October 2016 Bus and Rail Subcommittee meeting. Both discussions involved public comment, and the AAC meeting included the participation of Jack Evans, Metro Board Chair.

- The Office of External Relations notified their 2,900+ stakeholder list, which includes places of worship, event venues, business improvement districts, residences and apartments, schools, shopping areas and more. The list also included more than 300 Community Based Organizations (CBOs).

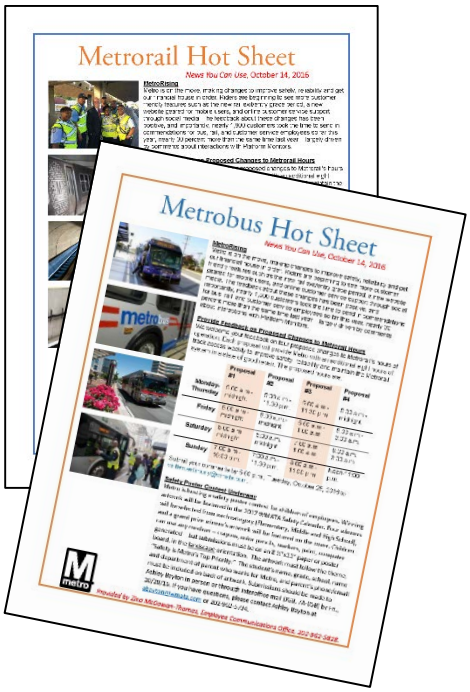
- Metro's Community Based Organization (CBO) Committee was also notified by the Office of Fair Practice and Diversity and provided pdf fliers in Amharic, Chinese, French, Korean, Spanish, and Vietnamese with 167 paper surveys collected from local CBOs.

- The Office of Bus Planning gave presentations about available Metrobus service and proposed bus mitigation to changes in Metrorail operating hours to the Metro's Riders' Advisory Council, Arlington County Transit Advisory Committee and the Metropolitan Washington Council of Governments-Transportation Planning Board Regional Transit Providers Subcommittee.

- Employees were notified of the proposals through the General Manager's weekly email message and the Metrobus and Metrorail "hot sheets" that are shared with the operation divisions.

- Amplify members were asked to weigh in on the proposed adjustments. Amplify is a community of 3,500 customers who provide on-going feedback to WMATA for immediate decision making.

- The Office of Government Relations provided extensive information on the Metrorail Operating Hours proposals to local, state jurisdictional and Congressional staff. Staff addressed follow up questions to the plan to ensure elected officials and their staff had a thorough understanding of the options.



Targeted Marketing & Media

Metro used targeted marketing and media strategies to increase awareness and encourage feedback on the proposal, with special attention given to the Spanish media.

- The creation of the webpage *wmata.com/hours* informed customers about the proposal and how customers could provide information, including the survey link and outreach locations. The page was also professionally translated into Spanish, and contained pdf fliers in Amharic, Chinese, Korean, and Vietnamese.

- Legal notices were placed in the Washington Post on Saturday, October 1, 2016, and Saturday, October 8, 2016, notifying the public of the opportunities to provide public comment.

- Advertisements in newspapers throughout the region, including ethnic media in multiple languages:
    - *The Express* (English)
    - *The Afro* (English)
    - *El Tiempo Latino* (Spanish)
    - *Washington Hispanic* (Spanish)
    - *Korean Times* (Korean)
    - *Epoch Times* (Chinese)
    - *Atref* (Amharic)
    - *Doi Nay* (Vietnamese)

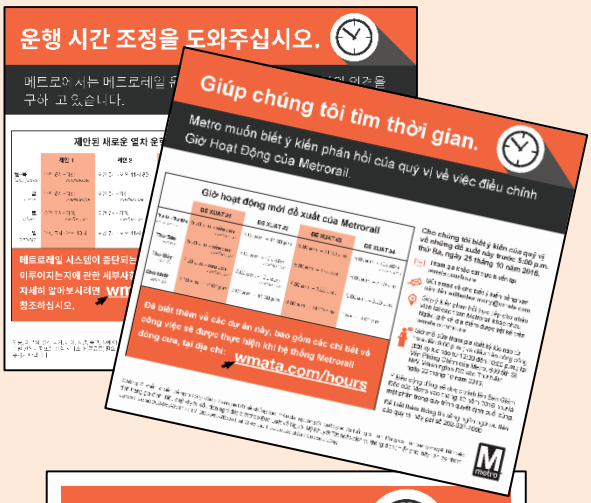
- English and Spanish signs posted in Metrorail stations, Bus Information Centers on Metrobus, and MetroAccess vehicles.

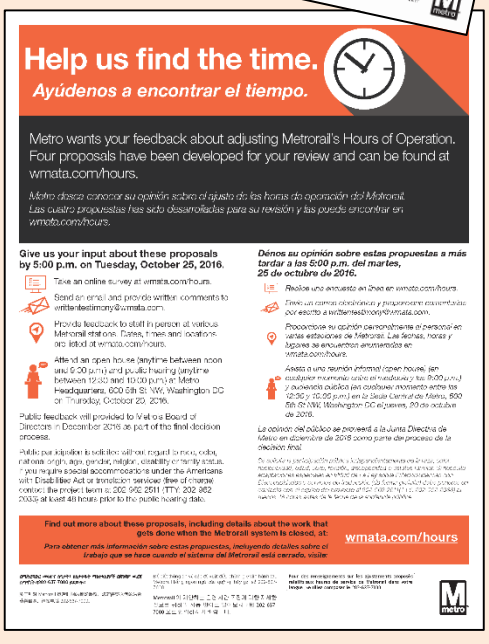
- Copies of the English and Spanish flier and notices were sent to all jurisdictional libraries.

- A press release was published on Tuesday, October 4.

- There was a large amount of media coverage about the change in Metrorail hours, from when the General Manager first announced the consideration through the end of the public comment period. There were more than 35 stories in print publications, 19 on radio, 9 online-only publications, and 33 on TV, including Spanish-language TV and print.

- Social media (Facebook, Twitter) was used to post information about the proposals and an advisory was sent to riders.



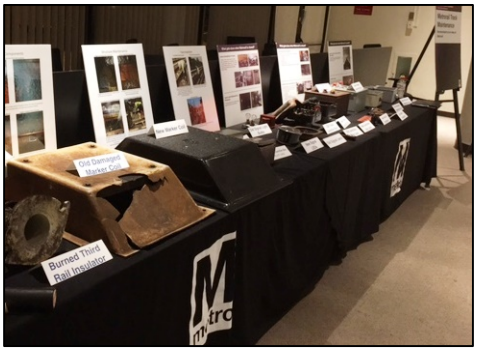


Open House & Public Hearing

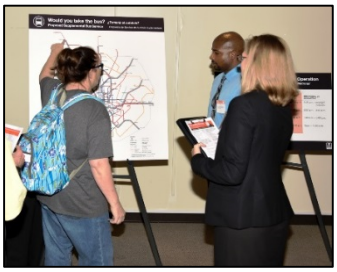
For the first time ever, Metro held an open house and public hearing that spanned more than nine hours on Thursday, October 20 at WMATA Headquarters, 600 5th St NW, Washington DC. The open house ran from noon until 9:00 p.m., and the public hearing began at 12:30 p.m. and ended at 10:00 p.m. This new format took into consideration those that worked non-traditional hours and may be largely impacted by these proposals and unable to attend a standard evening-only public hearing.

The open house provided the opportunity for attendees to speak one-on-one with staff members about the proposals, and comprised of five different sections:

- **Informational Video:** This 3-minute video ran every 10 minutes in English & Spanish with closed captioning. Seating was provided.
- **Metrorail Track Maintenance:** This area, staffed by rail/track maintenance managers, presented a show & tell of the different equipment that needs to be maintained
- **Metrobus Alternatives:** This area, staffed by Bus Planning, showcased possible supplemental bus service during the proposed cut hours.
- **Survey Feedback Area:** This area allowed attendees to take a survey about the proposals and answer a few additional questions about their experience at the open house.
- **Customer Service:** This area was staffed by Customer Service to answer other Metro-related questions.



The public hearing followed WMATA's standard public hearing procedures. Copies of the presentation were available in English and Spanish. Multiple members of the WMATA Board of Directors participated, including Jack Evans, Michael Goldman, Catherine Hudgins, Malcolm Augustine, Tom Bulger, Leif Dormsjo, Christian Dorsey, Robert Lauby and Kathryn Porter. Additional, members of WMATA's Executive Management Team participated throughout the hearing.



Signage throughout the open house and public hearing was in English and Spanish, and Spanish-speaking staff was available throughout both events. WMATA headquarters is ADA accessible and conveniently located next to Gallery Place and Judiciary Sq Metrorail stations.

Open House Number of Attendees	Public Hearing Number of Speakers
53	63

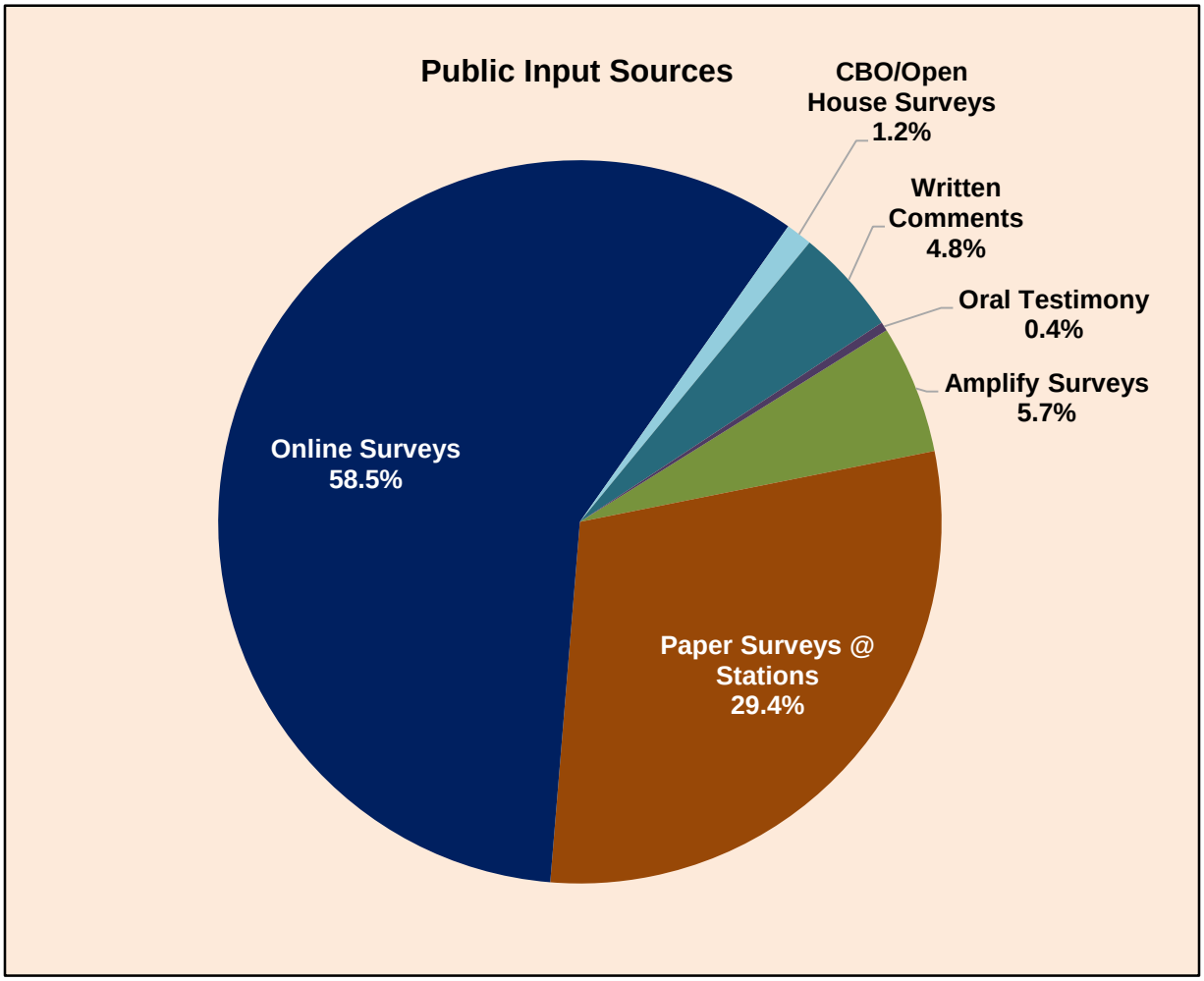
The oral testimony given at the public hearing accounted for only 0.04% of all feedback collected during the public comment period.

Out of the 53 open house attendees, 21 provided feedback on the event. Of those 21, 90% said the location for the public hearing and time of day was excellent or very good, 76% said the information given was excellent or very good, and every person was satisfied or very satisfied with their opportunity to provide feedback.

PUBLIC INPUT RESULTS

Metro collected **15,990** comments through the survey, writtentestimony@wmata.com and public hearing during the public comment period from Saturday, October 1 through 5:00 p.m. Tuesday, October 25, 2016.

94.8% of the comments received came in using the survey tool, either online or in person (paper). 58.5% of comments were provided via the online survey tool, either by the public opting to go online and take the survey or from emails sent out to stakeholders.



Feedback Type	Qty
Amplify Surveys	919
Paper Surveys @ Stations	4,708
Online Surveys	9,348
CBO/Open House Surveys	188
Written Comments	762
Oral Testimony	65
n=	*15,990*

Survey Results

Throughout several outreach channels that were utilized to best capture the diversity of Metro's customer base, a standard survey was used.

Amplify, WMATA's customer community, was the first group surveyed to understand the initial reaction to proposals (n=919). Additional outreach consisted of an online survey (n=9,348), paper survey at in-station outreach (n=4,708), and surveys completed by Community Based Organizations and attendees at the Open House (n=188). In total, 15,163 surveys were submitted. This outreach effort eclipsed outreach for the initial naming of Silver Line Phase 1 station naming (~13,500 completed surveys). The following analyzes the data for insights to assist in decision making.

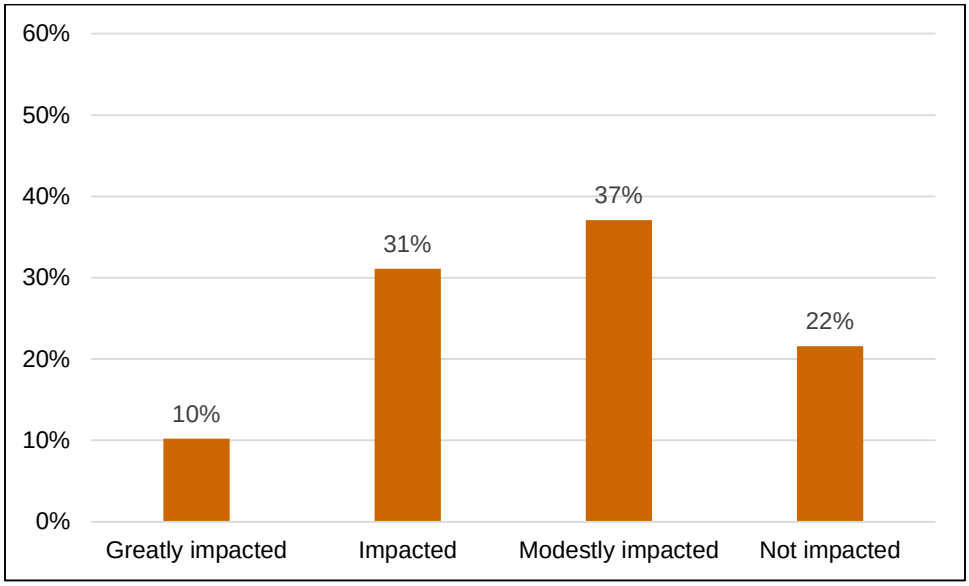
Impacted Customers

Metrorail Operating Hours proposals impacted several periods of service:

- Early weekend mornings—5:00-9:00 a.m. on Saturdays and Sundays
- Late evening—Between 10:00 p.m. and midnight
- After midnight

To gauge the severity of customer impact, customers were asked if they traveled using Metrorail or Metrobus during each of these three periods in the last seven days. Customers traveling during each of the three periods were considered "greatly impacted" by the proposals; customers traveling 2 of 3 periods were considered "impacted"; customers traveling during one period were considered "modestly impacted" and customers with no periods at all were considered "not impacted". (SEE CHART 1)

CHART 1: Impacted Survey Respondents



The majority of customers were modestly (37%) or not at all impacted (22%) by the Metrorail Operating Hours proposals. Ten percent of customers would be greatly impacted and another third (31%) would be impacted by one of the Metrorail Operating Hours proposals based on the periods they use the service.

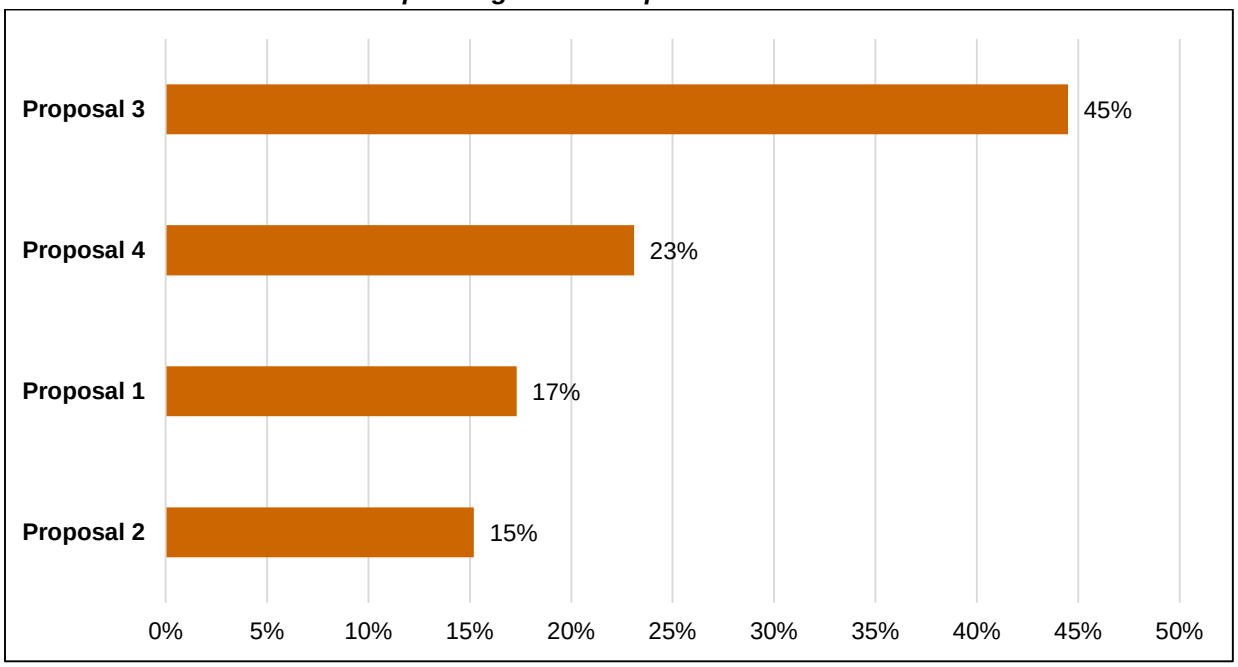
Metrorail Operating Hours Proposals

Four Metrorail Operating Hours proposals were submitted to the public for consideration.

- Proposal 1: Close Metrorail at midnight on Fridays and Saturdays and on Sunday at 10:00 p.m.
- Proposal 2: Close Metrorail at midnight on Fridays and Saturdays and at 11:30 p.m. Sunday through Thursday
- Proposal 3: Close Metrorail at 1:00 a.m. on Fridays and Saturdays, open at 8:00 a.m. and close at 11:00 p.m. on Sundays, and close at 11:30 p.m. Monday through Thursday
- Proposal 4: Open Metrorail at 9:00 a.m. on Saturdays and open at noon and close at 11:00 p.m. on Sundays

Overwhelming, nearly twice as many customers chose Proposal 3 (45%) as their preferred approach for gaining the additional 8 hours of maintenance window needed. Chart 2 provides the percentage of customers who chose other proposals.

CHART 2: Preferred Metrorail Operating Hours Proposal

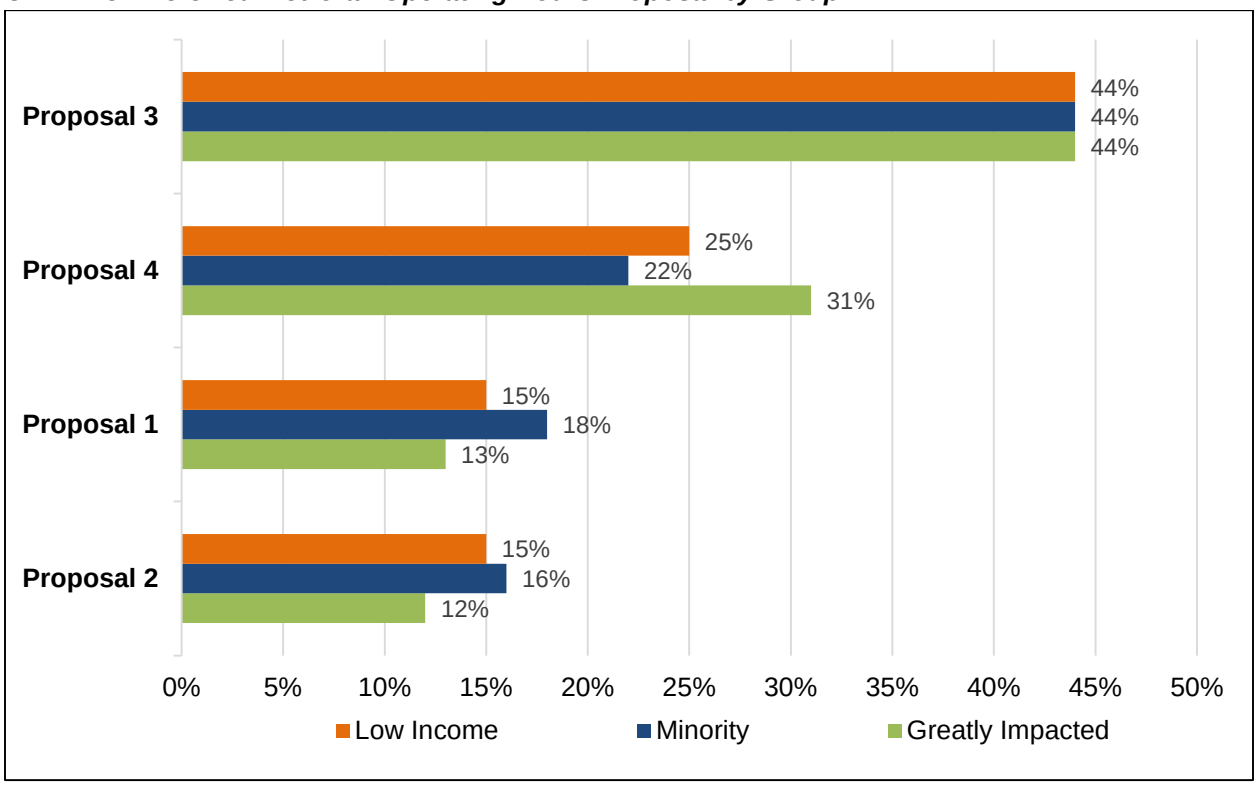


Important to consider in decision-making is which proposal various groups preferred; in particular, those greatly impacted and susceptible populations (i.e., low income and minorities). Table 1 and Chart 3 detail the proposal preferences for each group. Proposal 3 is the chosen approach for all groups in gaining the necessary 8 hour maintenance window.

TABLE 1: Preferred Metrorail Hours Proposal by Group

	Greatly Impacted	Minority	Low income
Proposal 1	13%	18%	15%
Proposal 2	12%	16%	15%
Proposal 3	**44%**	**44%**	**44%**
Proposal 4	31%	22%	25%
n=	*1543*	*5667*	*2322*

CHART 3: Preferred Metrorail Operating Hours Proposal by Group



Mode Preference During Additional Maintenance Hours

For staff to develop appropriate mitigation strategies, customers were asked how they would travel during the additional eight hours of maintenance work. Customers were first asked what they would primarily use – Metrobus, not make the trips at all or at a different time, drive, walk, use taxi/Uber/Lyft services, or ride a bicycle/Capital Bikeshare. If Metrobus was not a primary option, they were asked if they would consider bus if a bus option was available to serve their trip. To effectively determine mitigation strategies, customers were classified as follows:

- Primary Bus User—said Metrobus was their primary alternative to Metrorail closure
- Secondary Bus User—said an alternative mode was their primary alternative but would consider Metrobus
- Non-Bus User—said an alternative mode was their primary alternative but would not consider Metrobus

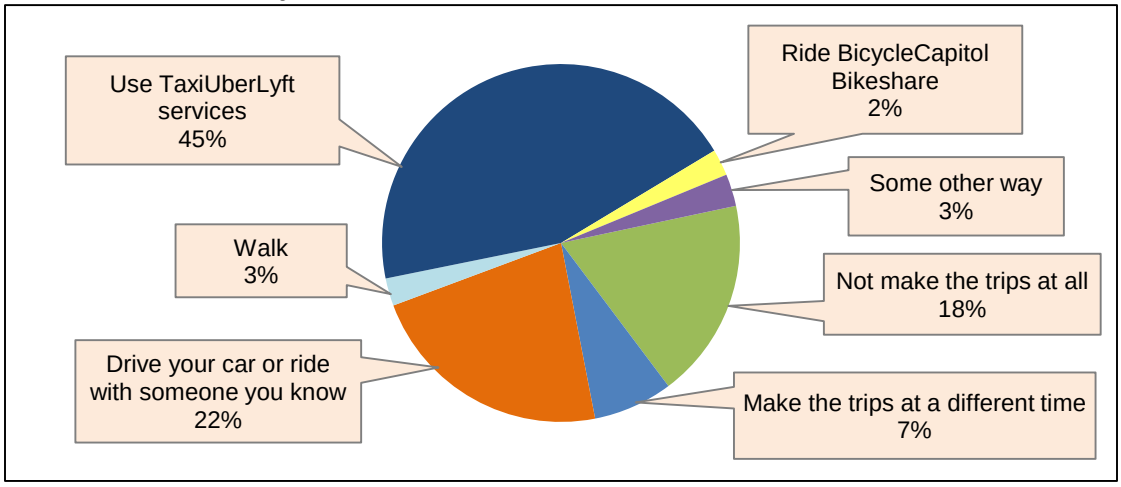
Table 2 provides an overview of each group as well as their demographic make-up. As true for other populations, all three bus customer groups prefer proposal three. The primary concern is how to mitigate undue burden to these groups during this period, particularly for those groups who chose not to use Metrobus as their primary alternative to Metrorail service.

TABLE 2: Bus User Preferences

Bus User Type	Total	Greatly Impacted	Minority	Low Income
Primary	15%	29%	23%	27%
Secondary	52%	50%	46%	51%
Non-User	33%	20%	30%	22%
n=	*14,992*	*1,528*	*5,610*	*2,308*

For non-primary bus users, Chart 4 provides an overview of preferred alternatives. **Overwhelming, this group of customers is opting for transportation network companies (ie. Taxi, Uber and Lyft) during these time periods (45%).** Others prefer to drive their own car or get a ride (22%) and another 25 percent won't make the trips at all or will wait until Metrorail is in service. Few customers opt for non-motorized alternatives.

CHART 4: Non-Primary Bus User Preferred Travel Alternatives

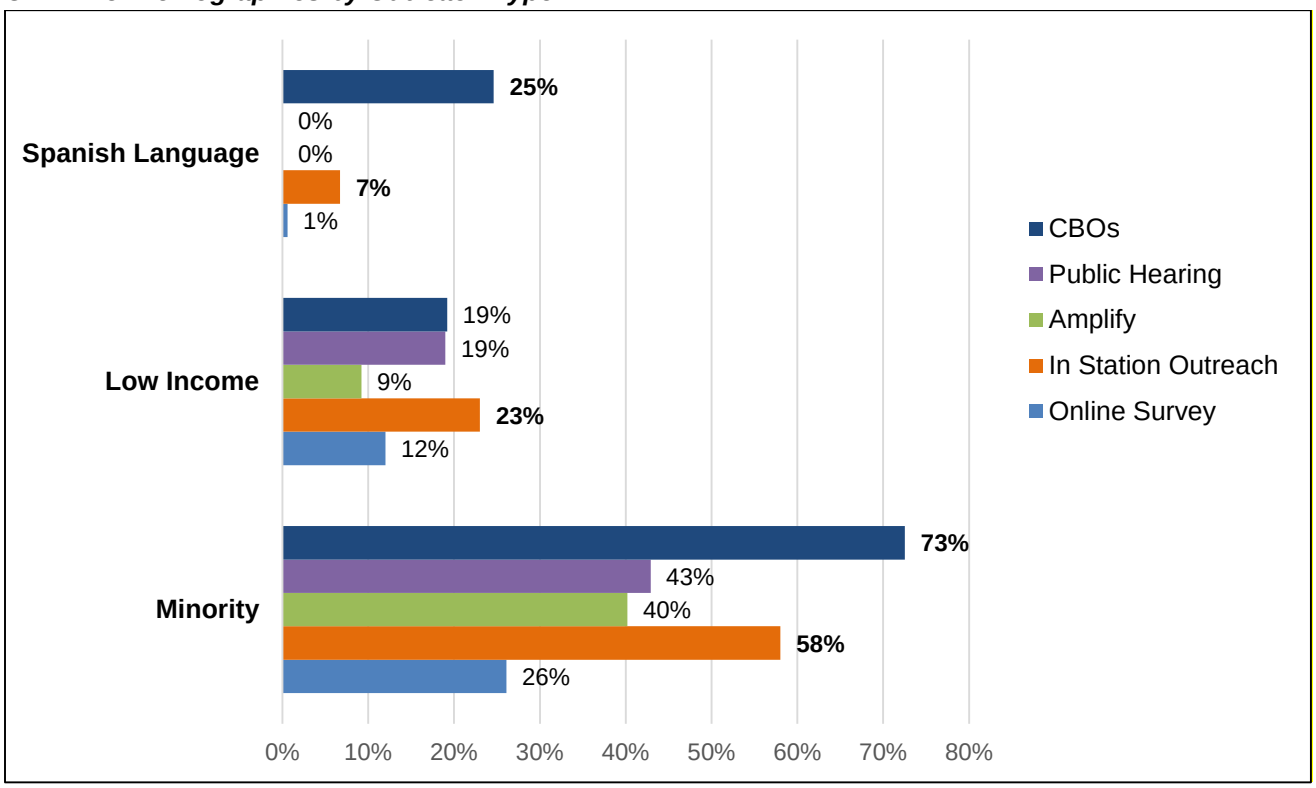


Survey Demographics

A total of 15,163 surveys were submitted on Metrorail Operating Hours proposals. Generally, Metro's rail ridership is predominately non-minority (55%) with incomes over $30,000 (87%) based on 2016 Rail Passenger Survey data. However, these percentages vary by time of day with late and early off-peak hours, reflecting a higher percentage of low income and minorities.

Metro's strategy to collect feedback in multiple ways, in-person and online, ensured adequate participation from all impacted groups. Evidenced by Chart 5, the type of outreach influenced how successful impacted groups participated. For example, in-station outreach was crucial for not only capturing those persons traveling at affected time periods but also capturing low income and minority customers more so than any other strategy. Outreach to community based organizations accounted for most of the Spanish speakers providing feedback.

CHART 5: Demographics by Outreach Type



Charts 6-9 show the overall demographics of those who completed a survey.

CHART 6: Low Income vs Non-Low Income

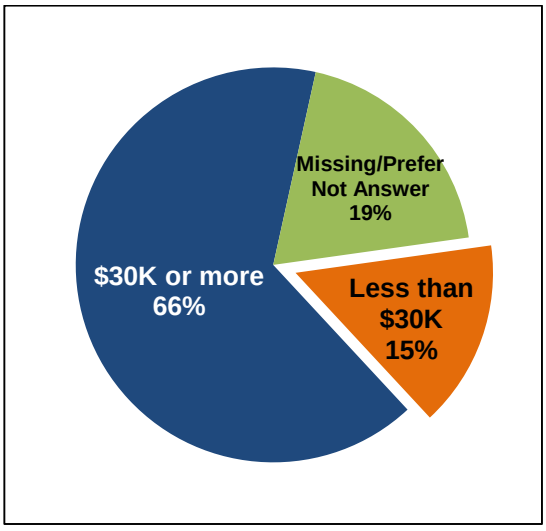


CHART 7: Minority vs Non-Minority

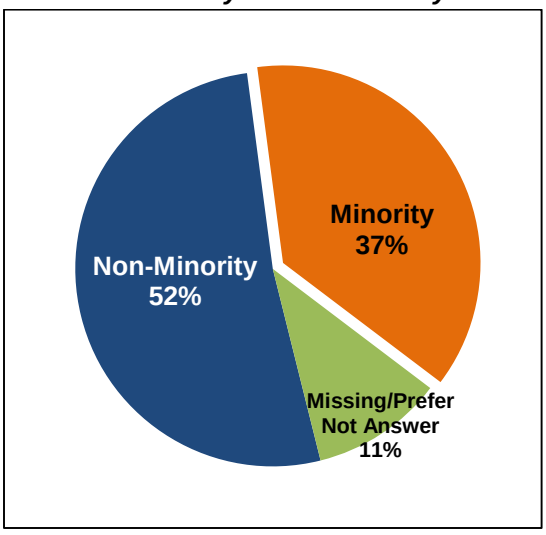


CHART 8: English vs Spanish Language

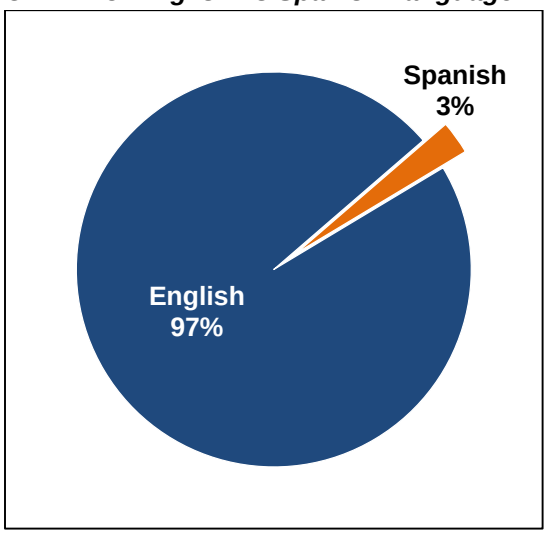
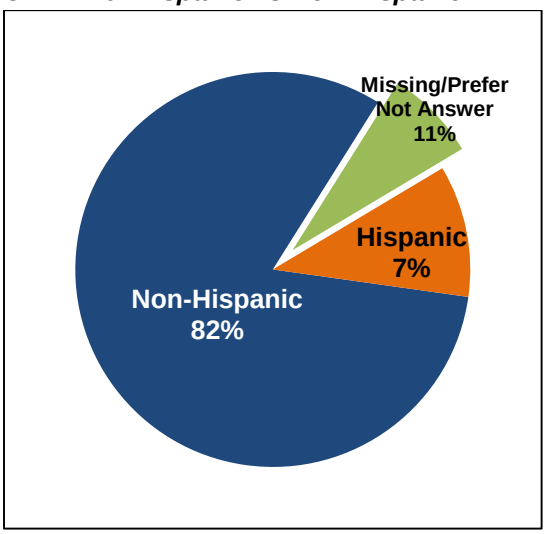
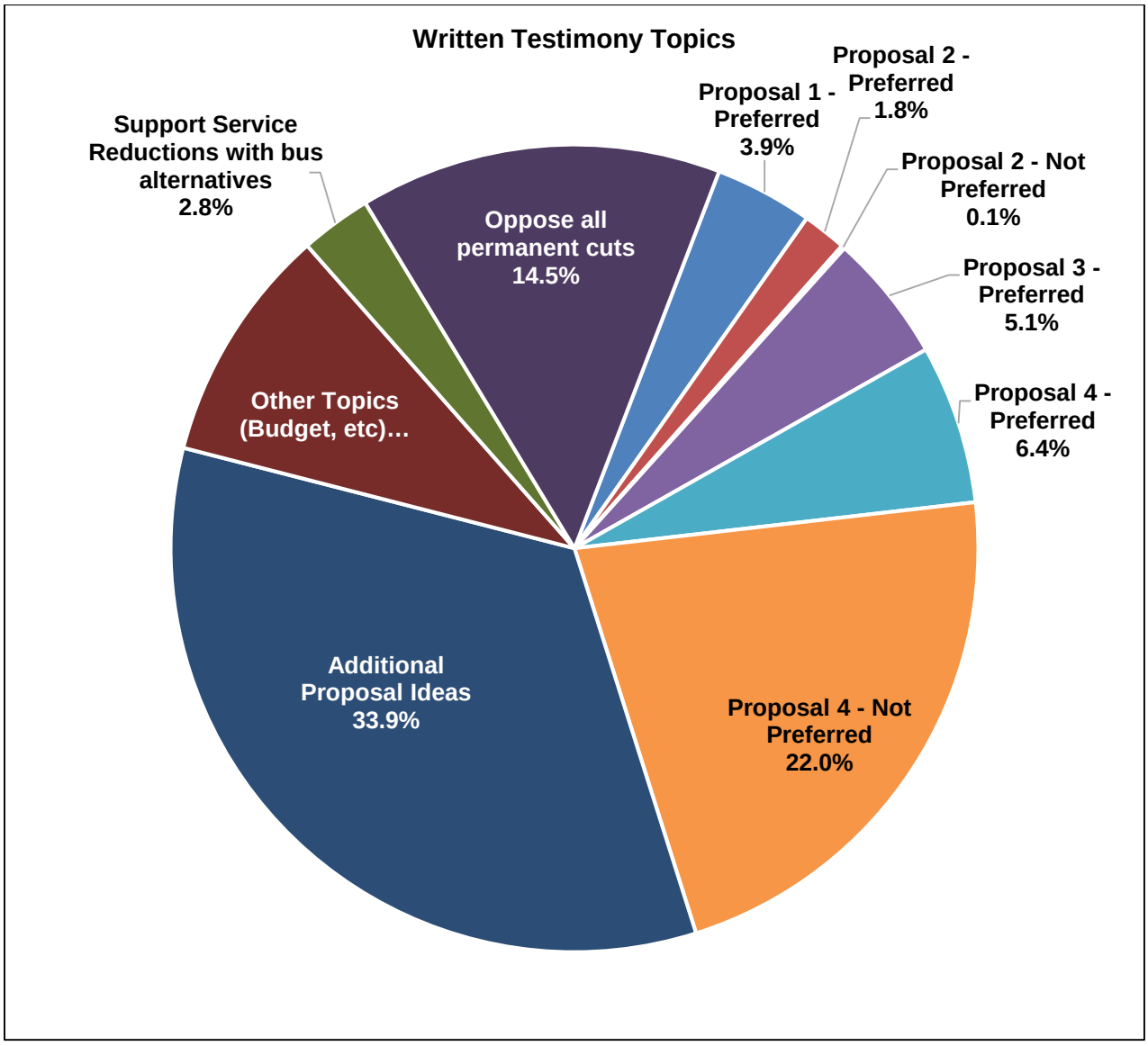


CHART 9: Hispanic vs Non-Hispanic



Written Comments

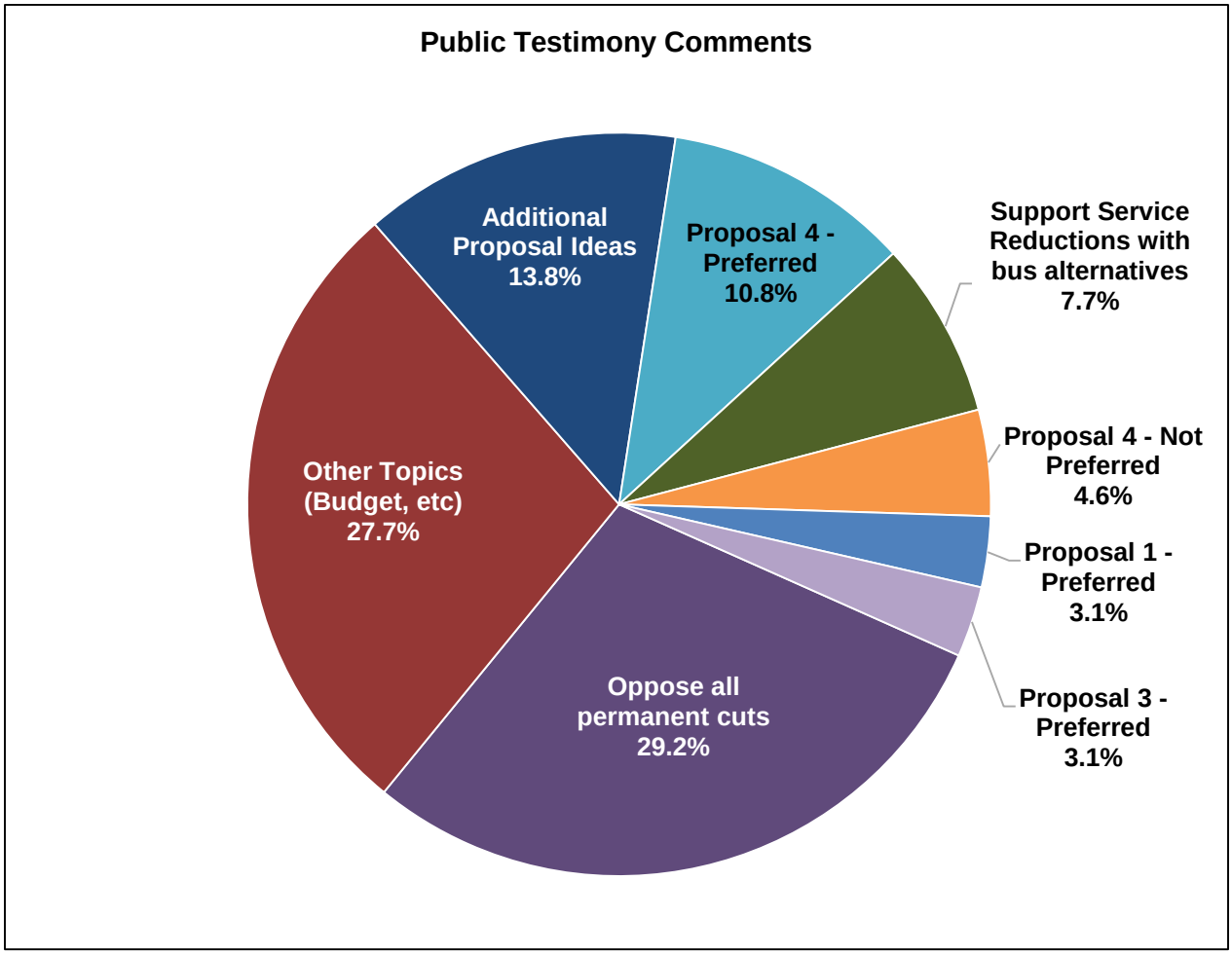
Customers had an option to email in comments about the proposals to writtentestimony@wmata.com. Metro received a total of 762 emails during the public comment period. Written testimony can be read in Appendix A. The majority of emailed comments focused on additional proposal ideas or against proposal 4. Many additional comments were received that were against all permanent cuts and about other topics, like budget.



Appendix A: please note that all emails were copied and pasted into a similar format, so some formatting and attachment details may have transferred improperly. Personal contact information has been deleted from this version. Repeated emails from the same sender were also omitted.

Public Hearing Oral Testimony

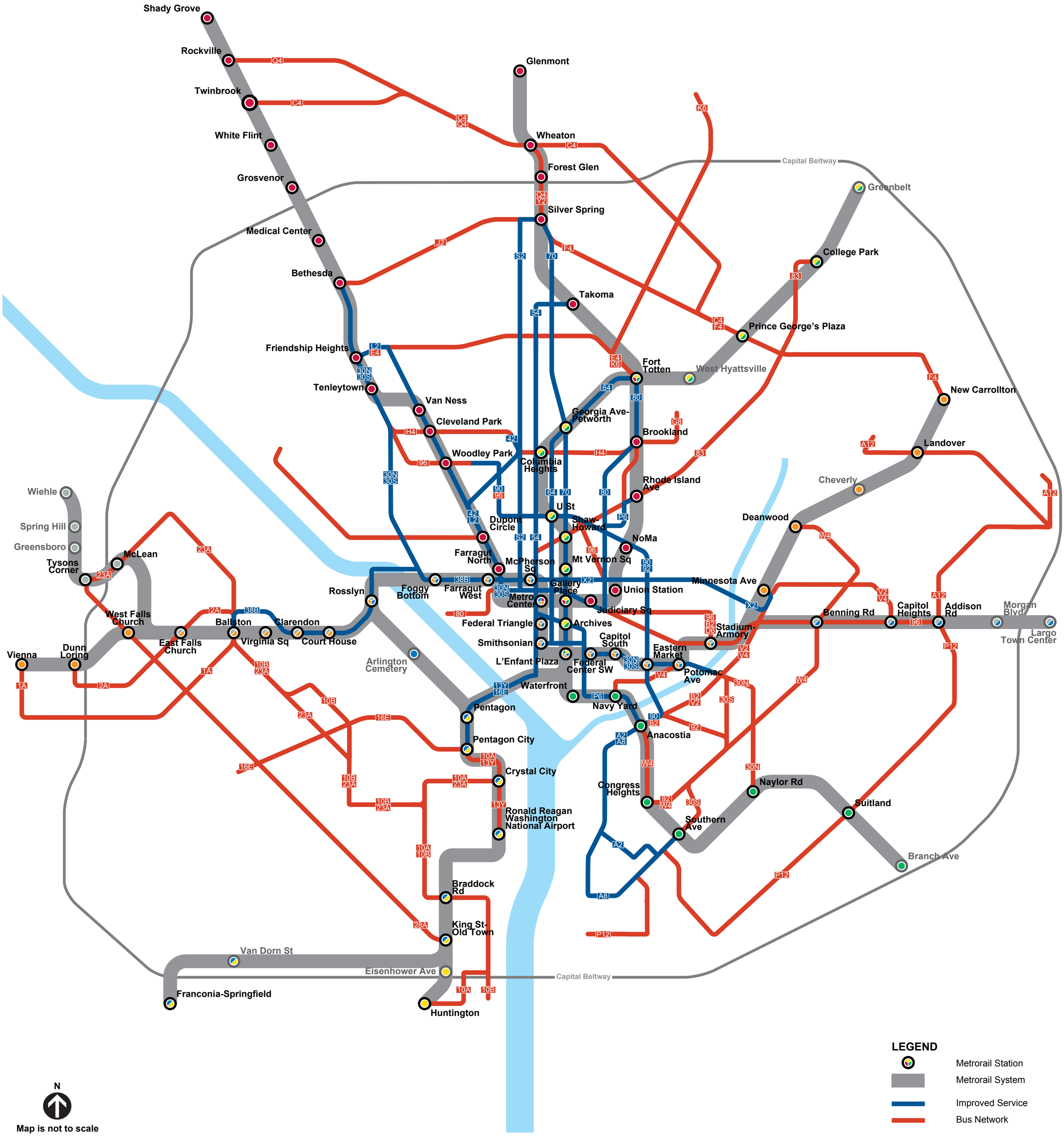
65 people gave public testimony during the 9 ½ hour Public Hearing on Thursday, October 20. Many speakers spoke about their opposition to all permanent service cuts, other Metro-related topics and additional service proposal ideas. Public testimony can be read in Appendix B.



Lifeline Network Access Metrobus Service Plan

Late Night Corridor	Route	Existing Late Night		Lifeline Network Access Proposal				
		Frequency (minutes)	*Last Trip Time*	*Reestablished Network Connection*	*Improved Frequency (minutes)*	*Mon-Thu Last Trip Time*	*Fri-Sat Last Trip Time*	*Sun Extended Trip Times*
District of Columbia								
Anacostia-Congress Hts-Alabama Ave	W4	30	2:30a				3:30a	
Anacostia-Congress Hts-Eckington	A2, A8, P6	30	3:30a	✓	15-30		3:30a	6:30-8:00a
Connecticut Ave-Mt Pleasant	42	35	3:00a		20-30		3:30a	
Connecticut Ave-Bethesda	L2	40	1:00a	✓	20-30		3:30a	6:30-8:00a
Crosstown-Military Rd	E4	40	1:00a				2:00a	
Crosstown-Mt Pleasant	H4	30	1:30a				2:30a	
Downtown-Southern Ave	New	-	-	✓	20	12:30a	3:30a	6:30-8:00a
East Capitol St-Cardozo-Addison Rd	96	30	3:00a	✓			3:30a	6:30-8:00a
H St-Benning Rd-Minnesota Ave	V4, X2	15-30	3:00a		15-20		3:00a	
Mid-City (7 St-Georgia Ave/14 St/16 St)	54, 70, S2	15-30	3:30a		15-20		3:30a	
Mid-City (11 St-Ft Totten)	64	30-45	2:00a		30		3:00a	
North Capitol St-Ft Totten	80	30	1:30a				2:30a	
Pennsylvania & Wisconsin Aves	30N, 30S	30-60	2:00a		20-60		3:00a	
Rhode Island Ave-College Park	83	35-60	2:00a				3:00a	
Rhode Island Ave-Brookland	G8	35-60	1:00a				2:00a	
U St-Garfield	90, 92	30	2:30a				3:30a	
Maryland								
East-West Hwy	F4, J2	30	1:00a				2:00a	
Eastover-Addison Rd-Central Ave	A12, P12	30-60	12:30a				2:00a	
Georgia Ave-Viers Mill Rd	Q4	30	1:30a				2:30a	
Greenbelt-Twinbrook-University Blvd	C4	30	1:00a				2:00a	
New Hampshire Ave	K6	30	1:30a				2:30a	
Rhode Island Ave-College Park	83	60	2:00a	✓			2:00a	6:30-8:00a
Connecticut Ave-Bethesda	L2	-	-	✓	20-30			6:30-8:00a
Virginia								
Ballston-Farragut Square	38B	30	1:30a		20-30	1:30a	3:30a	
Ballston-Wilson Blvd-Washington Blvd	1A, 2A	60	12:30a				2:00a	
Ballston-Tysons-Crystal City	23A	60	12:00a				1:00a	
Leesburg Pike	28A	30	1:00a				2:00a	
Pentagon-Ballston-Mt Vernon Ave	10A, 10B	30-60	1:00a				2:00a	
Pentagon-Columbia Pike-DC	16E	30-60	3:30a	✓	30-45		3:30a	6:30-8:00a
Reagan Nat'l Airport-Pentagon City-DC	13Y	-	-	✓	20-30	1:00a	1:00a	8:00a

Note: Frequency and last trip times are approximate.


Shady Grove
Rockville
Twinbrook
White Flint
Grosvenor
Medical Center
Bethesda
Friendship Heights
Tenleytown
Van Ness
Cleveland Park
Woodley Park
Glenmont
Wheaton
Forest Glen
Silver Spring
Takoma
Capital Beltway
Greenbelt
College Park
Prince George's Plaza
West Hyattsville
New Carrollton
Landover
Cheverly
Fort Totten
Georgia Ave-Petworth
Brookland
Columbia Heights
Rhode Island Ave
U St
Dupont Circle
Shaw-Howard
NoMa
Mt Vernon Sq
Farragut North
McPherson Sq
Farragut West
Foggy Bottom
Rosslyn
Gallery Place
Union Station
Judiciary Sq
Metro Center
Federal Triangle
Archives
Smithsonian
Capitol South
L'Enfant Plaza
Federal Center SW
Eastern Market
Potomac Ave
Waterfront
Navy Yard
Pentagon
Pentagon City
Crystal City
Ronald Reagan Washington National Airport
Arlington Cemetery
Braddock Rd
King St-Old Town
Van Dorn St
Eisenhower Ave
Franconia-Springfield
Huntington
Wiehle
Spring Hill
Greensboro
Tysons Corner
McLean
West Falls Church
Dunn Loring
Vienna
East Falls Church
Ballston
Virginia Sq
Clarendon
Court House
Deanwood
Minnesota Ave
Benning Rd
Capitol Heights
Addison Rd
Morgan Blvd
Largo Town Center
Stadium-Armory
Congress Heights
Southern Ave
Naylor Rd
Suitland
Branch Ave
Anacostia
LEGEND
Metrorail Station
Metrorail System
Improved Service
Bus Network
N
Map is not to scale