



**Massachusetts Bay
Transportation Authority**

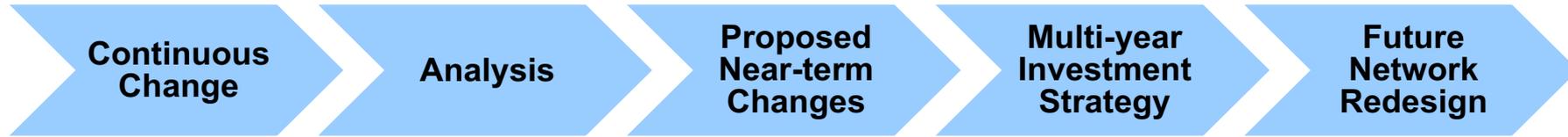
Better Bus Project Update

FMCB, April 8, 2019

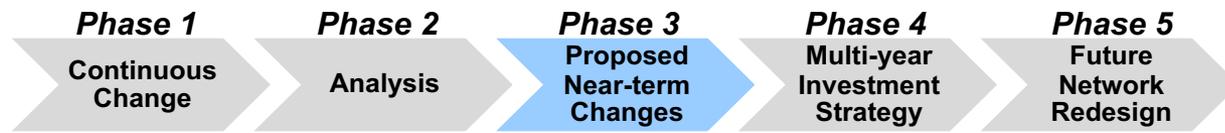
Better Bus Project.



Better Bus Project Process Map: Update



	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5
Products/ Actions	<ul style="list-style-type: none"> ✓ Early Morning Pilot ✓ Late Night Pilot ✓ SL3 Service Expansion ✓ Dedicated Bus Lanes ✓ Transit Signal Prioritization ✓ Signal Optimization ✓ Addition Resources ✓ Dropped Trip Task Force ✓ Quarterly Goals 	<ul style="list-style-type: none"> ✓ 1st Round Public/ Stakeholder/Operator Outreach ✓ Review existing service ✓ Jan 28: Release State of the System Report ✓ Jan 28: Release Market Analysis 	<ul style="list-style-type: none"> ✓ Ongoing: Municipal and State Officials Outreach ✓ Jan 28: Release near-term service proposals ✓ Jan 28 to Mar 13: 2nd Round Public/ Stakeholder Outreach ✓ Apr: FMCB Vote: Go/No-Go • Early-May: Build new schedules & routes • Fall: Begin implementation 	<ul style="list-style-type: none"> ✓ Jan 28: Release Route Profiles ✓ Feb 25: Discuss Multi-year Investment Strategies for FY20 ✓ Mar: Finalize FY20 resource request • Apr: Selection of FY20 investment level by the FMCB Board 	<ul style="list-style-type: none"> ✓ Nov: RFP posted • Mar: Consultant award (on track)



Executive Summary

Goal of today is to summarize the deeper analysis of the Better Bus Project proposals and **seek Board approval to move forward with implementation of the recommended package.**

- Recap process to sort, sequence and implement BBP proposals
- Review equity analysis based on revised package
- Review proposals identified for revision and that have external contingencies
- Review sorted list of recommend proposals to move forward
- **FMCB ACTION REQUESTED:** Approve revised package of proposals
- Review key next steps

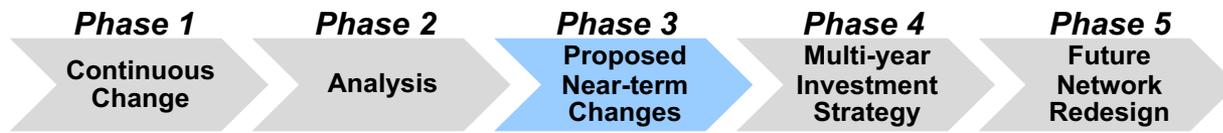
Sort: Which proposals recommended for implementation
(incl. any revisions)



Sequence: Sequence implementation based on dependencies

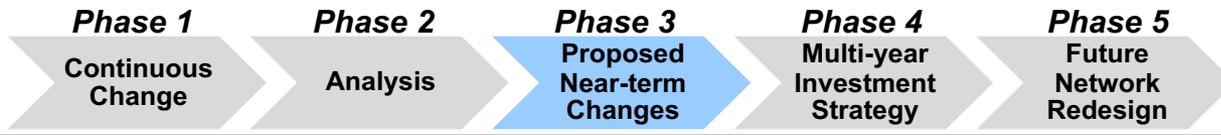


Implement: Starting Fall 2019
(proposals contingent on 3rd party may take longer)



Sort: Equity Analysis context

- The MBTA is required by the FTA to **evaluate the impacts on minority and/or low-income populations** when there is a **proposed “major” service change** to any fixed-route services
- There are multiple factors that can elevate a service change to be considered a “major” service change, and once ‘triggered’, **an equity analysis must consider concurrently all proposed changes in the aggregate**
- An equity analysis will evaluate the degree of adverse effects, and evaluate if the effects of the major service change may result may result in **disparate impacts on minority and/or disproportionate burdens on low-income populations**
- For major service changes, the **MBTA’s threshold** for determining adverse effects cause disparate/disproportionate effects is **20%**



Sort: Equity Analysis outcome for Near-Term proposals

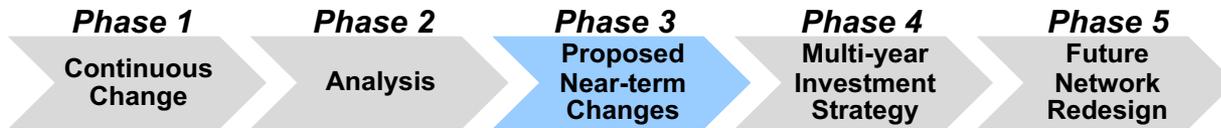
Equity Analysis

Equity analysis based on revised package of BBP Proposals finds no **disparate impact/benefit** or **disproportionate burden/benefit**

**Table 5
Summary of DI/DB Results**

	Revenue Vehicle Hours (in weekly RVH)	Route Length (in weekly Miles)
Disparate Impact/Benefit		
Absolute Change (Minority / Nonminority)	No Disparate Impact/Benefit Protected group benefits, while nonprotected group burdened	No Disparate Impact Ratio: 449 / 647 < 120%
Relative Change (Minority / Nonminority)	No Disparate Impact/Benefit Protected group benefits, while nonprotected group burdened	No Disparate Impact Ratio: 6.5% / 6.5% < 120%
Minority Share of Change / Minority Share of Existing	No Disparate Impact/Benefit Protected group benefits, while nonprotected group burdened	No Disparate Impact Ratio: 41% / 41% < 120%
Disproportionate Burden/Benefit		
Absolute Change (Low Income / Non-Low-Income)	No Disproportionate Benefit Ratio: 38.2 / 1.8 > 80%	No Disproportionate Burden Ratio: 358 / 738 < 120%
Relative Change (Low Income / Non-Low-Income)	No Disproportionate Benefit Ratio: 0.23% / 0.01% > 80%	No Disproportionate Burden Ratio: 6.7% / 6.4% < 120%
Low Income Share of Change / Low Income Share of Existing	No Disproportionate Benefit Ratio: 96% / 36% > 80%	No Disproportionate Burden Ratio: 33% / 32% < 120%

Note: The ratio used to identify disparate impacts and benefits cannot be calculated when one group benefits and the other is burdened. If the protected group benefits and the non-protected group does not, there is no disparate impact or benefit.



Sort: Results of Deeper Analysis

5/16	9	34/34E	CT1/1	SL2
36	37	44	4	59
52	64	70/70A	60	72/74/75
92	106	111	89	90
120	134	201/202	95	220
222	225	350	411	435
428	424		441/442/ 448/449	455/459
			501/502/ 503/504	(NEW) 35

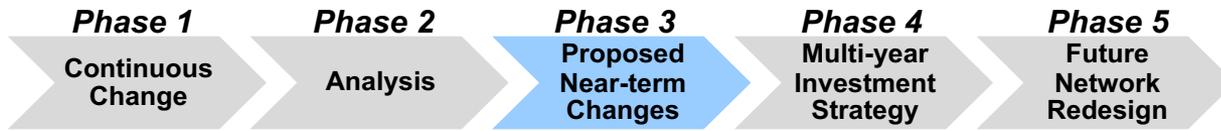
Recommend as final package (36)

8	18
19	26/27
47	65
93	131/136/ 137
215	238
430	

Not for CY19 (11)

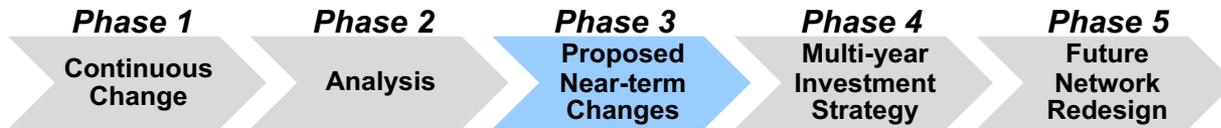
Was under deeper review as of 3/25

Revised vs. original proposal



Sort: Details of Revised Proposals

<p>Add 35</p>	<p>Would coordinate implementation with Route 34, 52 changes (serving Dedham Mall at Stop & Shop bus stop location only). Not included in the original list of 47 proposals.</p>
<p>36</p>	<p>Shorten most trips from Millennium Park to VA Medical Center due to school closure</p>
<p>59</p>	<p>Preserve some lifeline service to Eliot St</p>
<p>60</p>	<p>Preserve Chestnut Hill Mall stop; need new stop at/near Chestnut Hill Square</p>
<p>89</p>	<p>Preserve some peak and school service at Clarendon Hill</p>
<p>90</p>	<p>Preserve direct connection to Sullivan</p>
<p>95</p>	<p>Test potential demand by alternating trips between Arlington Center & Playstead Rd.</p>
<p>220</p>	<p>Preserve some lifeline service to Hingham Center Loop</p>
<p>501/502/ 503/504</p>	<p>Implement only during PM peak when 501/503 serve both sides of Newton Corner</p>



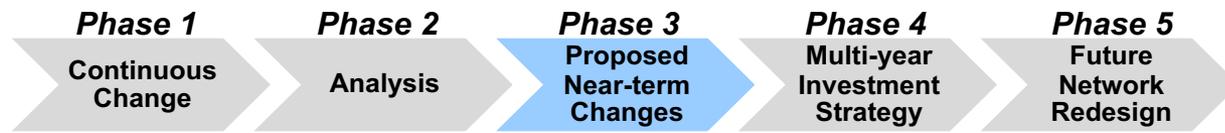
Sort: Recommended Package for FMCB Approval

CT1/1	4	5/16	Add 35 ★	36 ★	SL2
37	44	52	64	70/70A	9
72/74/75	89 ★	90 ★	92	95 ★	34/34E
106	111	120	134	201/202	59 ★
220 ★	222	225	411	424	60 ★
428	435	441/442/ 448/449	455/459	501/502/ 503/504 ★	350

Target Implementation in Fall 2019 and Winter 2019-20

Implement After Resolving Contingency

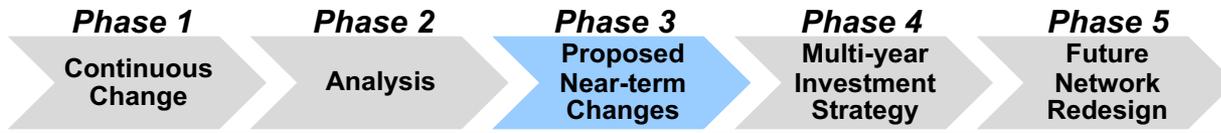
★ Revised vs. original proposal



Key Next Steps

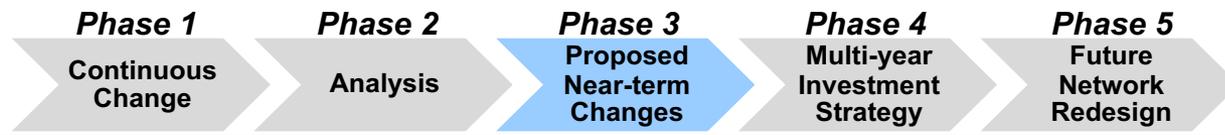
Date	Meeting/Deliverable Release
✓ Dec 10	<i>FMCB Presentation – Part 1 Work Plan Review, Overview of State of System and Market Analysis</i>
✓ Jan 14	<i>FMCB Presentation – Part 2 Overview of Near-term Change Proposals</i>
✓ Jan 28 to Mar 13	<ul style="list-style-type: none"> • Kick off Round 2 of public engagement • Release Market Analysis • Release State of the Bus System Report • Release Near-term Change Proposals • Release Route Profiles
✓ Feb 25	<i>FMCB Presentation – Part 3 Discuss Multi-year Investment Strategies for FY20</i>
✓ March	Action: <i>FMCB Propose FY20 Budget</i>
○ April	Action: <i>FMCB Vote on Package for Near-Term change proposals</i>
May	<i>FMCB Presentation – Draft FY20-24 CIP</i>
June	Action: <i>MassDOT Board vote on FY20-24 CIP</i>

All proposals available online on at: mbta.com/betterbus



Appendix: Details of contingencies to be resolved

<p>SL2</p>	<p>Work with Massport to improve lighting, safety, and accessibility of path of travel from 88 Black Falcon to Drydock Ave @ Black Falcon Ave stop</p>
<p>9</p>	<p>Need for relocated bus stop, multiple options under review in order to mitigate safety concerns with stop on W. Broadway</p>
<p>34/34E</p>	<p>Requires coordination with Legacy Place</p>
<p>59</p>	<p>MassDOT will soon be starting a reconstruction project of Needham Street. Necessary to understand full implications of project before deciding to implement proposal now or wait until the project is completed in 2022</p>
<p>60</p>	<p>Requires coordination for a new bus stop to serve Chestnut Hill Square</p>
<p>350</p>	<p>City of Burlington must build a new sidewalk to allow for a bus stop</p>



Appendix: Detailed Equity Analysis

Table 1

Gain, Loss, and Net Change in Weekly Revenue Vehicle Hours for Each Population Group based on Shifting Resources

Classification	Gain of Hours	Loss of Hours	Net Change	Percent Change
Minority	351.4	-323.3	28.1	0.13%
Nonminority	522.4	-510.5	11.8	0.05%
Low Income	296.0	-279.1	16.9	0.10%
Non-Low-Income	577.8	-554.7	23.1	0.08%

Table 2

Gain, Loss, and Net Change in Weekly Revenue Vehicle Hours for Each Population Group based on Alignment Changes

Classification	Gain of Hours	Loss of Hours	Net Change	Percent Change
Minority	72.6	-17.1	55.4	0.26%
Nonminority	17.1	-72.6	-55.4	-0.22%
Low Income	42.1	-20.8	21.3	0.13%
Non-Low-Income	20.8	-42.1	-21.3	-0.07%

Table 3

Gain, Loss, and Net Change in Weekly Revenue Vehicle Hours for Each Population Group based on Both Types of Change

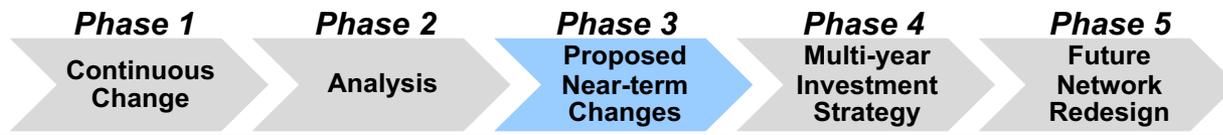
Classification	Existing Hours	Share of Existing	Gain of Hours	Loss of Hours	Net Change	Share of Net Change	Percent Change
Minority	21,426.2	46%	424.0	-340.4	83.6	NA	0.39%
Nonminority	25,364.0	54%	539.5	-583.1	-43.6	NA	-0.17%
Low Income	16,790.8	36%	338.1	-299.9	38.2	96%	0.23%
Non-Low-Income	29,999.4	64%	598.6	-596.8	1.8	4%	0.01%

Table 4

Gain, Loss, and Net Change in Weekly Route Length for Each Population Group

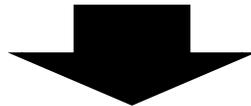
Classification	Existing Miles	Share of Existing	Gain of Miles	Loss of Miles	Net Loss	Share of Net Loss	Percent Loss
Minority	6,910.6	41%	23.1	-472.3	-449.1	41%	-6.5%
Nonminority	9,968.2	59%	93.0	-739.7	-646.7	59%	-6.5%
Low Income	5,346.0	32%	22.3	-380.1	-357.8	33%	-6.7%
Non-Low-Income	11,532.9	68%	93.8	-831.8	-738.0	67%	-6.4%

Source: MBTA RVH Spreadsheets as processed by CTPS. 2010-2014 ACS 5-year Estimates. 2010 U.S. Census

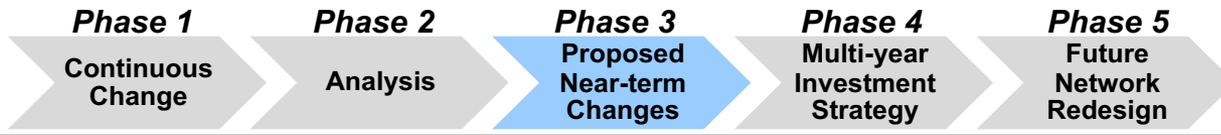


Appendix: Reviewing Feedback Using Screening Principles

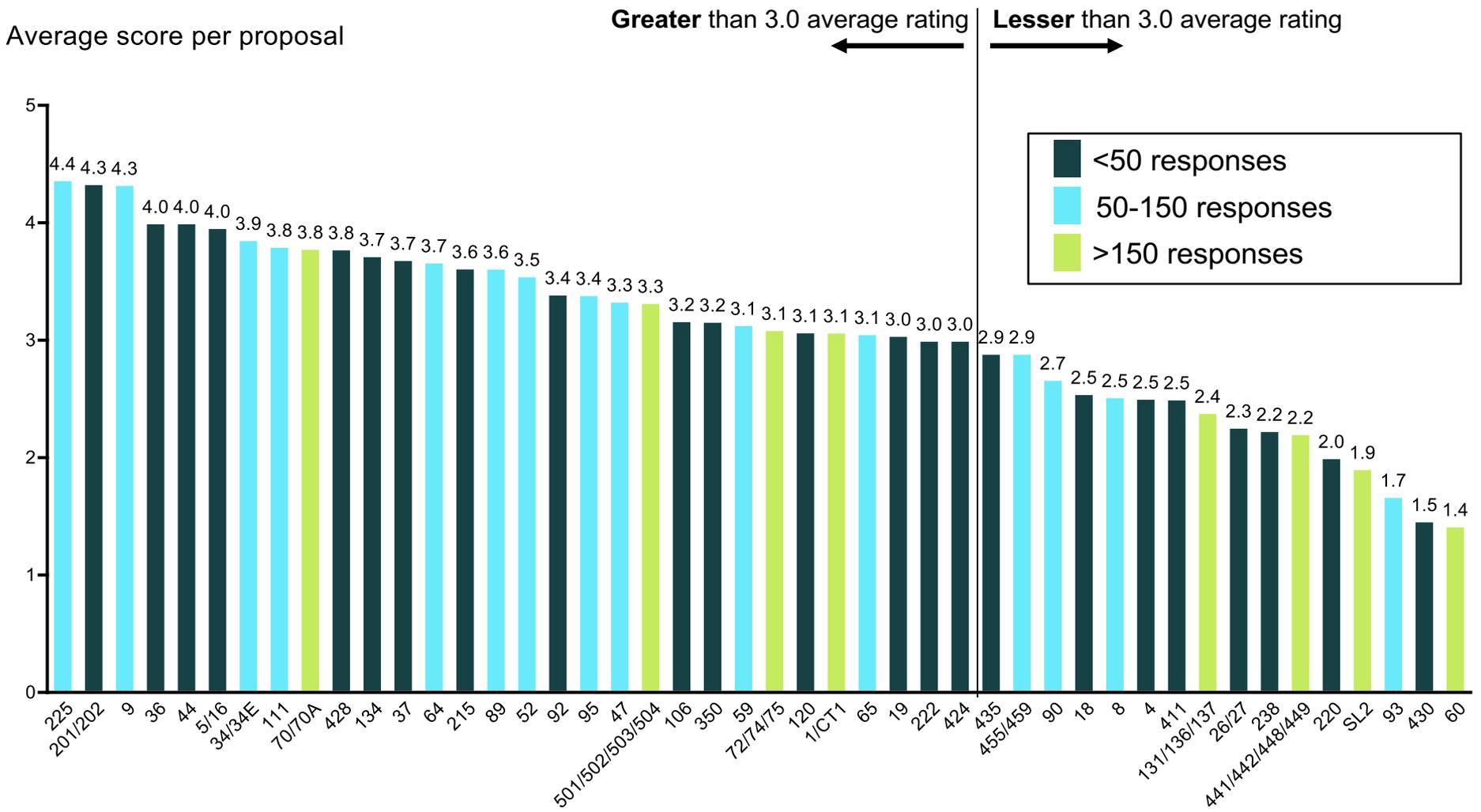
- Staff screening all open-ended comments for all 47 route proposals to understand feedback and form a recommendation, using following principles:
 - Net positive feedback (average score as well as distribution)
 - Ridership representation (ratio of commenters to route riders)
 - Safety considerations
 - Accessibility considerations
 - Loss of direct service
 - Equity and populations affected



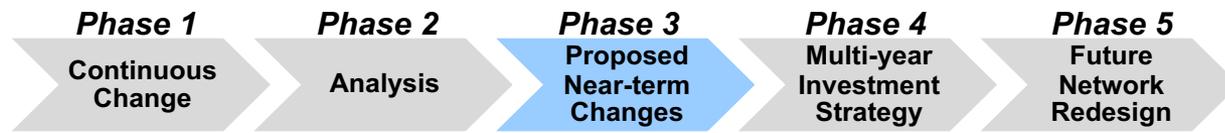
Each proposal evaluated along multiple criteria – feedback rating not taken alone without other considerations



Appendix: Over 3,500 discrete comments / ratings on proposals

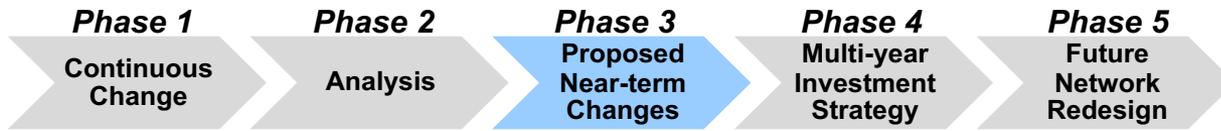


Note: As of 3/13, based on ratings from online survey and in-person worksheets



Appendix: Common Themes Heard via Public Feedback

- **Reliability and frequency** most demanded metrics
- **Accessibility should not be lost**, but either met or improved, and busway access should be maintained as much as possible
- In favor of additional connectivity, but **not always with trade-off of less frequency**
- **Mostly in favor of proposed routing changes if frequencies could be maintained** or improved
- Key to **maintain connectivity to high-demand destinations** like hospitals, malls, and transit hubs
- Generally unwilling to walk greater distances in exchange for improved frequencies, citing safety, accessibility, and time as concerns
- Many riders valued their one-seat rides and **opposed being required to make a transfer**, even to high-frequency services



Appendix: Outreach since January 28

Between Open Houses, Street Teams and MBTA Community Meetings, staff had over 2,500 in-person interactions

Type of Event	Number of Meetings
Community Meetings	8
Open Houses (at stations)	7
Street Teams (at stations)	6
Briefings	50+

Online Feedback

Type of Feedback	Number of Comments
Online Feedback Form	2,854
Emails/Letters	284