



**Massachusetts Bay
Transportation Authority**

Bus Service Plan

December 4, 2017



Overview

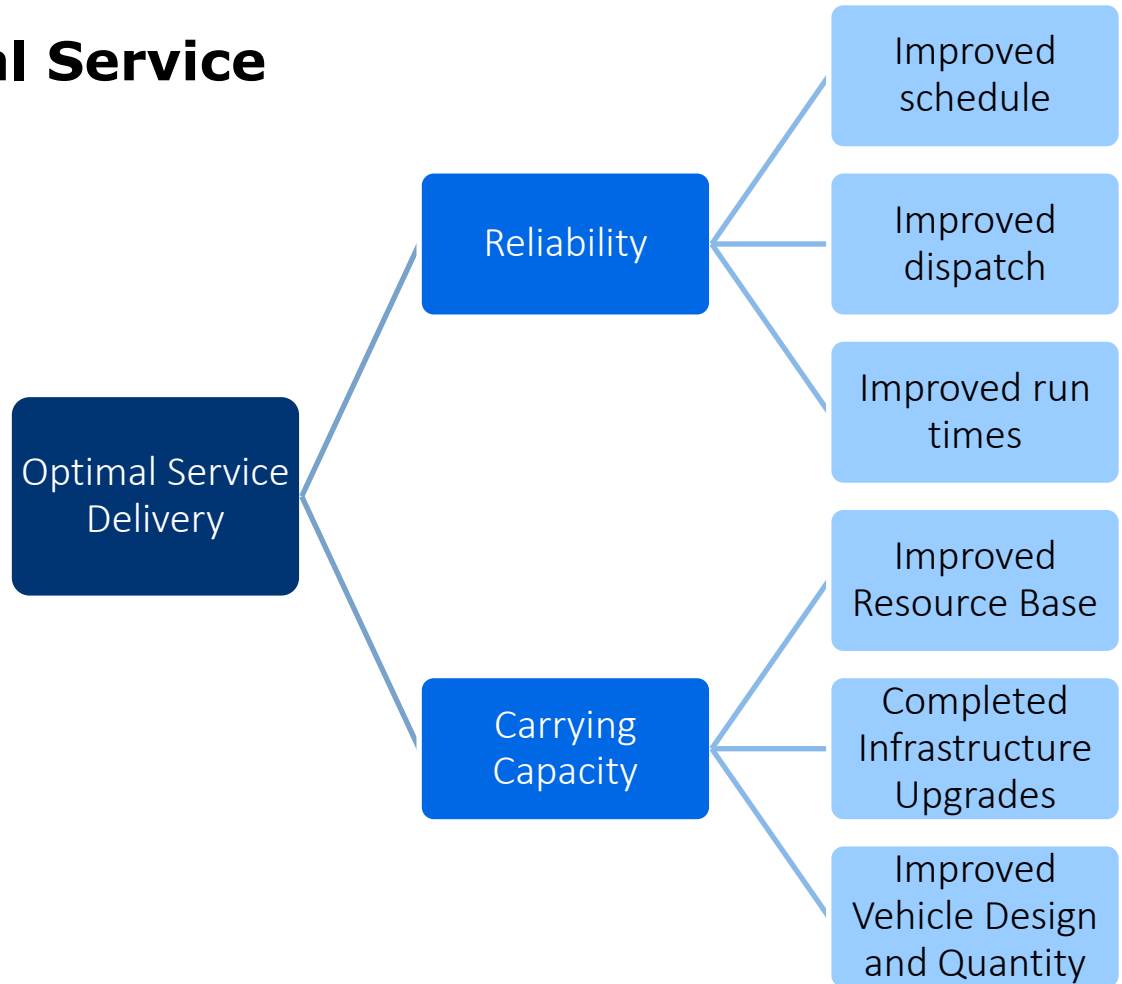
- Setting the Context
 - Challenges We Face
 - The Service Plan
 - Progress
 - Next Steps
 - Implementation Timeline
 - It's Complicated
 - Presentations to the Board, 2018
- Contractors and Resources, Data and Analytics, Tools, and Outreach and Engagement



Setting The Context

Capacity and Optimal Service Delivery

Optimal service delivery means buses arrive within their scheduled headway, and with enough space for all passengers to board.





Tactical Tool Box

Service Changes

- Run time and reliability changes
- Frequency and span changes

Operational Changes

- Improved dispatching tools and procedures



Capital Investments

- Additional vehicles
- Infrastructure investment

Partnerships with municipalities

- Signal Prioritization
- Signal Phase Optimization
- Dedicated Bus Lanes

Private sector partnerships

- Technical Analyses

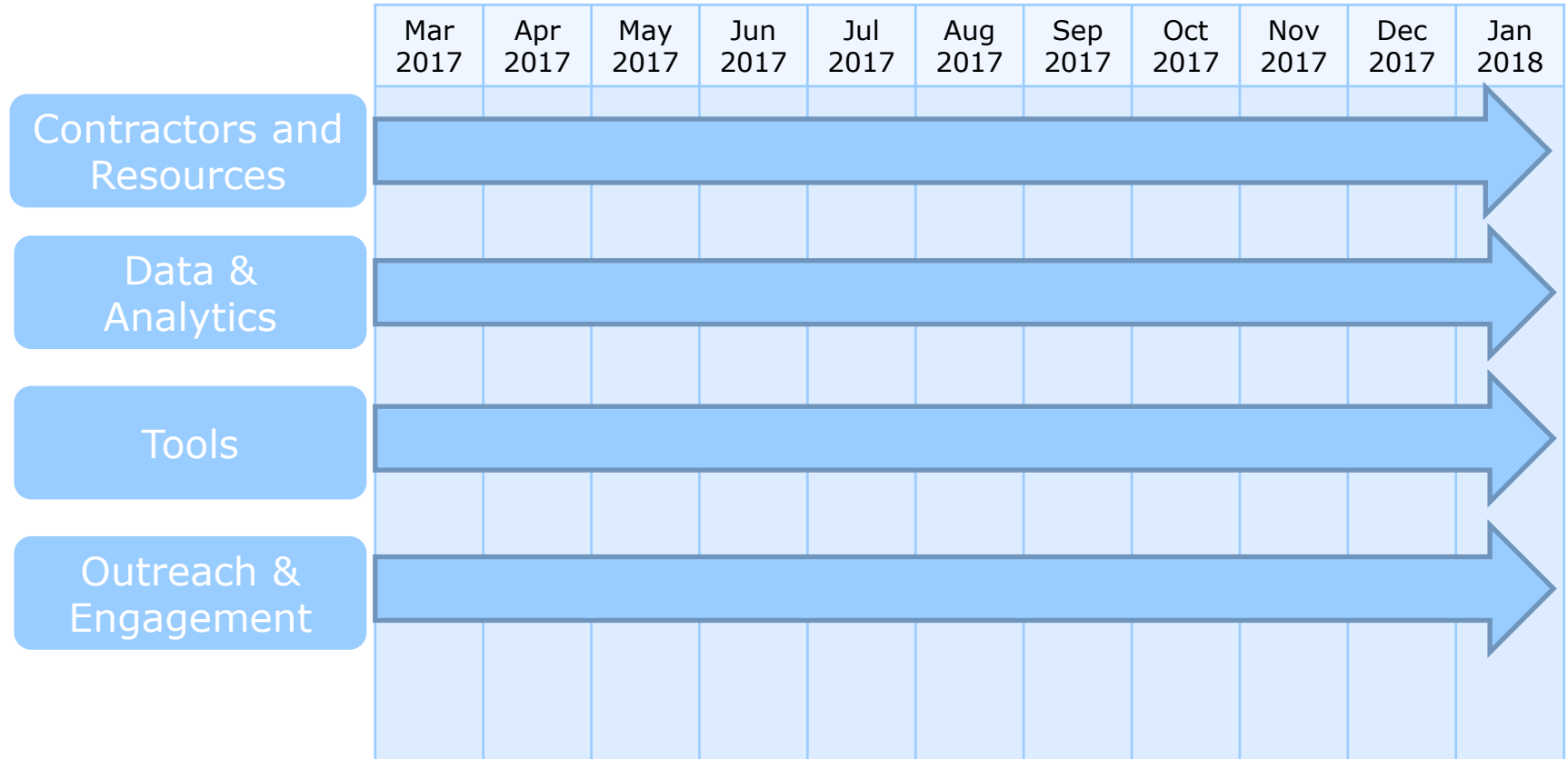


The Service Plan

- The goal of the Service Plan is to understand and analyze where our bus service is not meeting the standards set by the Service Delivery Policy approved in January 2017.
- A series of plans and recommendations will be proposed to the FMCB for approval.
- The Service Plan will be implemented during the 2019 calendar year, based on scheduled quarterly updates to service delivery.



Progress, March 2017 – January 2018





Contractors and Resources

- **Nelson Nygaard**
 - Technical Analysis and Tier Buildout
- **IBI**
 - Technical Analysis
- **Transit Center**
 - Stakeholder Outreach and Engagement Plan, Framing and Communication Plan
- **Regina Villa**
 - Public Outreach and Engagement Implementation
- **HASTUS Evaluation Scope**
 - Scope Completed, RFP to be released in December
- **Director of Operational Outreach and Strategy**
 - To start December 18, 2017

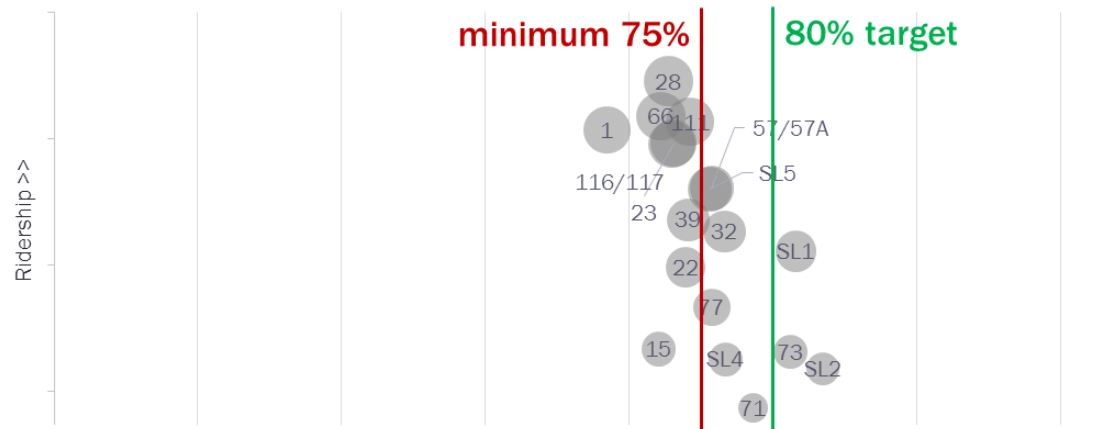




Reliability, October 2017

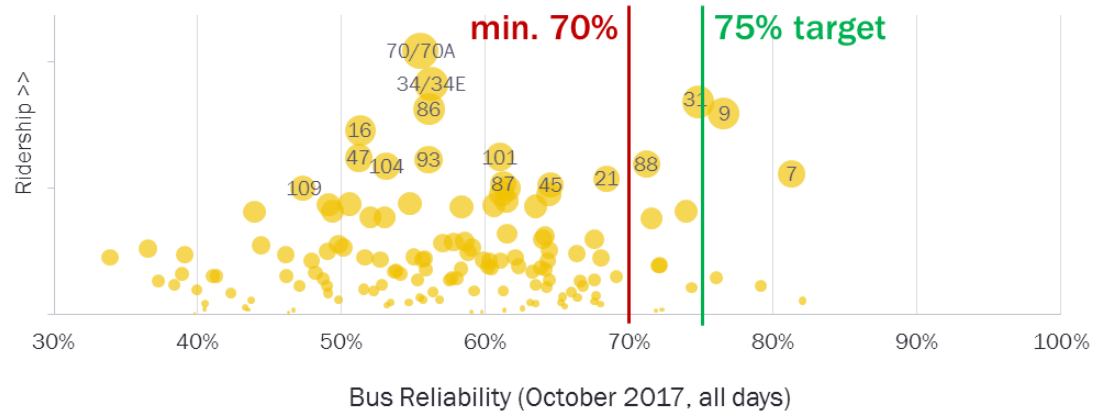
● Key Bus + Silver Line

- 3 above target
- 6 between
- 9 below min.



● Other Routes

- 6 above target
- 9 between
- 128 below min.





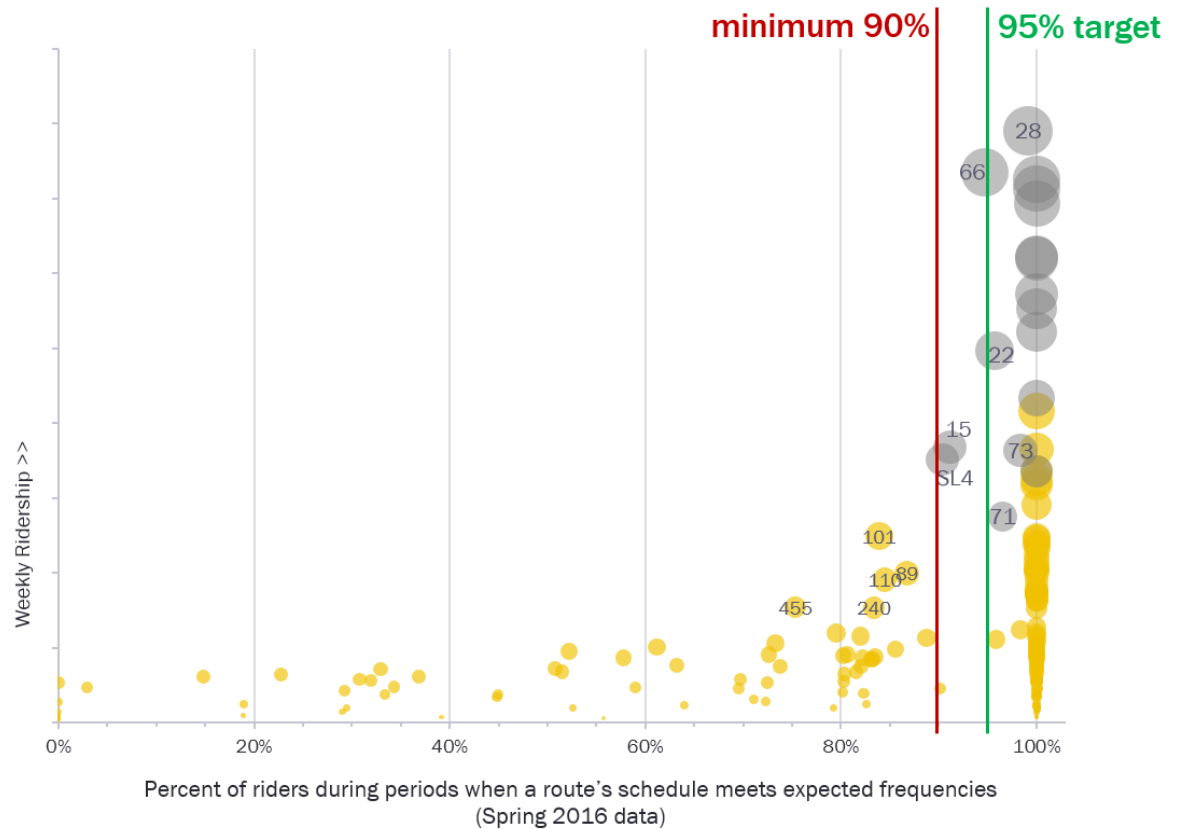
Frequency, Spring 2016

● Key Bus + Silver Line

- 14 above target
- 3 between
- 1 below min.

● Other Routes

- 73 above target
- 1 between
- 67 below min.

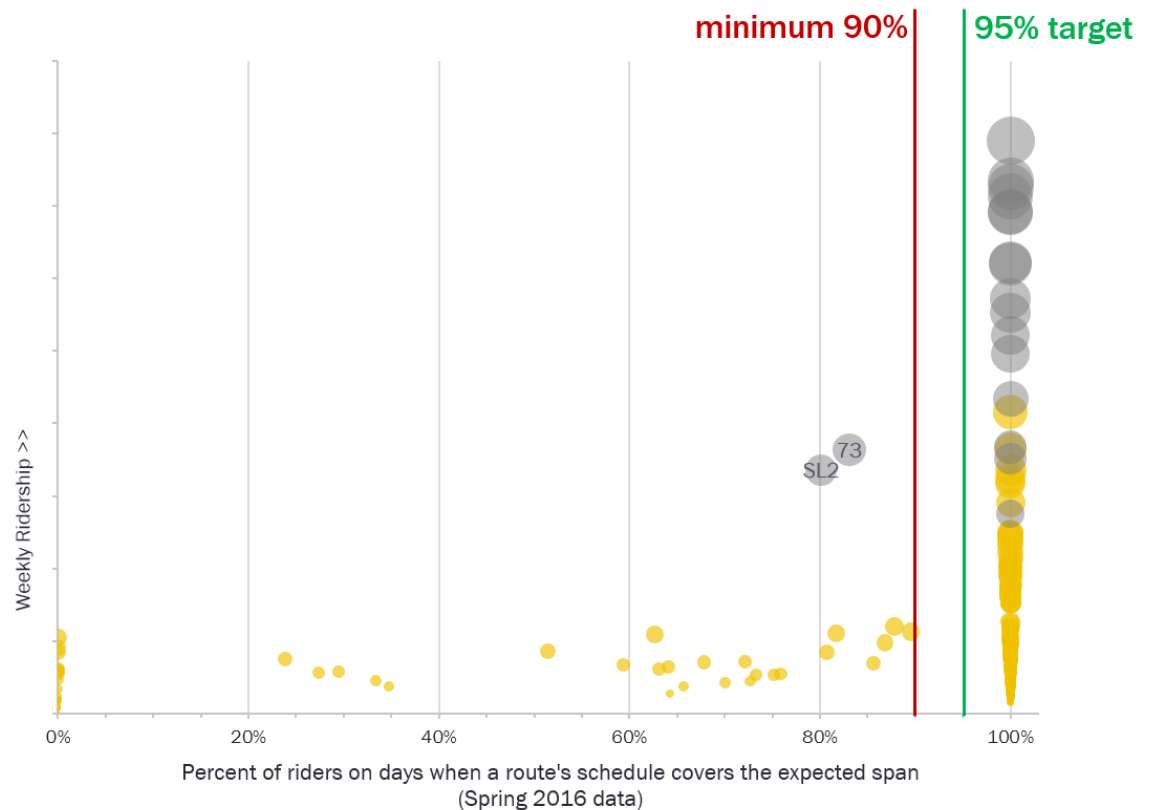




Span of Service, Spring 2016

- **Key Bus + Silver Line**
 - 16 perfect
 - 2 below min.

- **Other Routes**
 - 88 perfect
 - 53 below min.





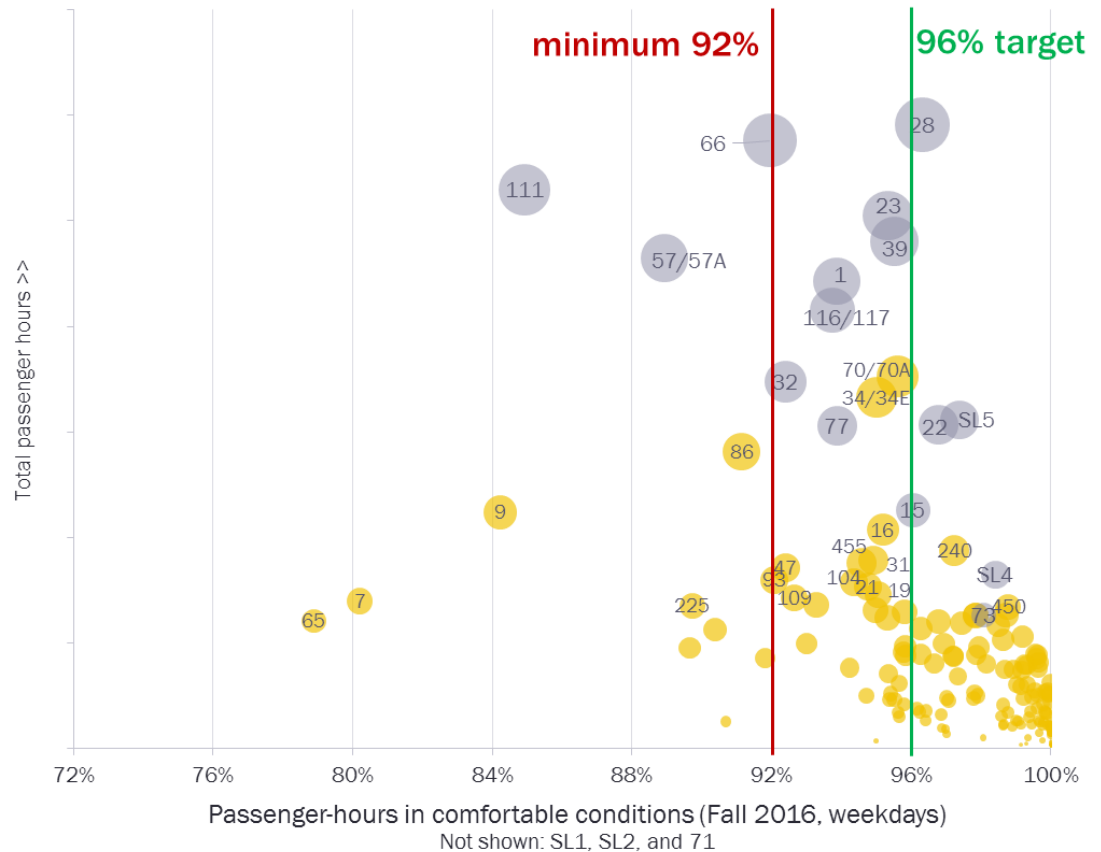
Comfort, Fall 2016

● Key Bus + Silver Line

- 6 above target
- 6 between
- 3 below min.

● Other Routes

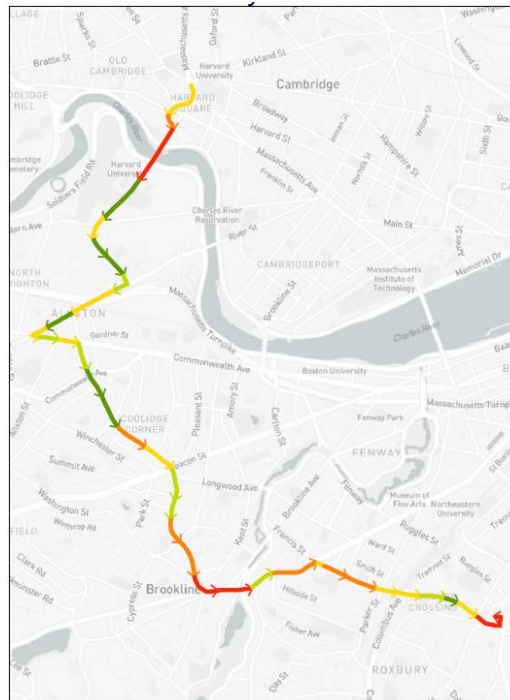
- 93 above target
- 40 between
- 8 below min.





Technical Tools

- Development of the Gap Analysis Tool
- Development of the ODX Tool
- MBTA 360 Tool
- HASTUS
- Remix
- Conveyal



Route 66 - AM Peak Inbound

Segment Start	Segment End	Median Running Time	Reference Running Time	Excess Running Time	Median Load	Travel Time LOS	Excess Pkx Time	Unreliability	Composite Grade
Harvard Sq Garden St - Dawes	Eliot St Bennett St	96	92	4	6	1.04	0.4	102.13	D
Eliot St Bennett St	Jfk St Eliot St	61	43.5	17.5	11.5	1.4	3.35	79.36	E
Jfk St Eliot St	N Harvard St Gate 2 Harvard	181.5	89	92.5	13	2.04	20.04	68.93	F
N Harvard St Gate 2 Harvard	N Harvard St Western Ave	40.5	41	0	11.5	0.99	0	15.71	B
N Harvard St Western Ave	N Harvard St Franklin St	58.5	43	15.5	10.5	1.26	2.71	29.45	D
N Harvard St Franklin St	N Harvard St Coolidge Rd	15	13	2	13	1.05	0.43	4.66	B
N Harvard St Coolidge Rd	N Harvard St Hooker St	24	25	0	15	0.96	0	9.47	B
N Harvard St Hooker St	Cambridge St Lincoln St	47	37	10	17	1.27	2.83	18.57	C
Cambridge St Lincoln St	Cambridge St Franklin St	60.5	51	9.5	18	1.15	2.85	38.92	D
Cambridge St Franklin St	Cambridge St Emery Rd	29	28	1	19	1.04	0.32	8.26	B
Cambridge St Emery Rd	Brighton Ave Cambridge St	60	45	15	18	1.33	4.5	25.87	D
Brighton Ave Cambridge St	Brighton Ave Allston St	29	25	4	21	1.16	1.4	23.35	C
Brighton Ave Allston St	Brighton Ave Harvard Ave	36	28	8	24	1.29	3.2	27.08	D
Brighton Ave Harvard Ave	Harvard Ave Commonwealth Ave	48	37	11	29	1.3	5.32	22.81	C
Harvard Ave Commonwealth Ave	Harvard St Verdale St	40	38	2	38	1.05	1.27	17.95	B
Harvard St Verdale St	Harvard St Coolidge St	29	28	1	42	1.04	0.7	7.6	B
Harvard St Coolidge St	Harvard St Shaler St	56.5	31	25.5	42.5	1.82	18.06	22.15	E
Harvard St Shaler St	Harvard St Beacon St	47	32	15	43	1.47	10.75	15.51	D
Harvard St Beacon St	Harvard St Marion St	56	47.5	8.5	42	1.38	5.95	17.16	C
Harvard St Marion St	Harvard St Harris St	28	22	6	42	1.27	4.2	19.69	C
Harvard St Harris St	Harvard St School St	42	26	16	40	1.62	10.67	33.67	E
Harvard St School St	Harvard St Washington St	47	33	14	40	1.42	9.33	45.47	E
Harvard St Washington St	Washington St Walnut	102	60	42	38	1.7	26.6	61.22	F
Washington St Walnut	Huntington Ave S Huntington	103	35	68	37	2.94	41.93	107.71	F
Huntington Ave S Huntington	Huntington Ave Parker Hill A	66	56.5	9.5	39	1.17	6.17	34.48	C
Huntington Ave Parker Hill A	Huntington Ave Opp Fenwood R	63	34	29	42	1.85	20.3	46.34	E

Route 73 AM Peak



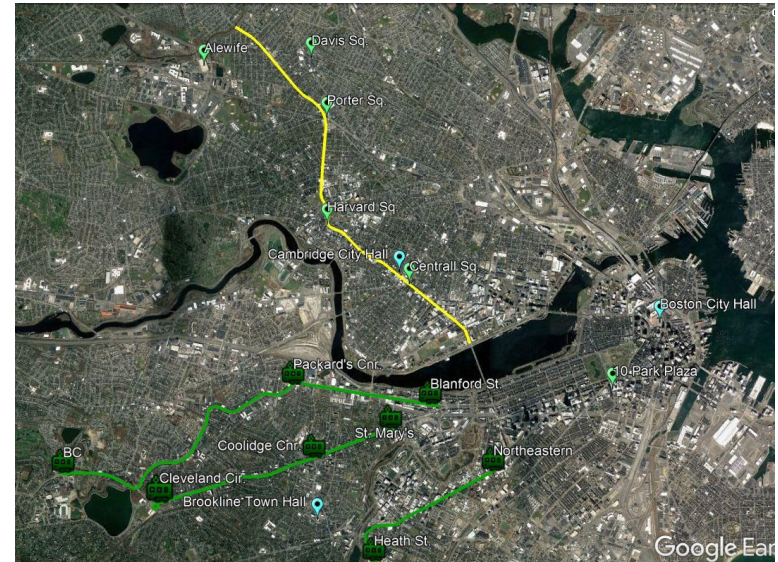


Optimization Tools

- New Bus Schedules
- Transit Signal Priority
- Signal Prioritization
- Dedicated Bus Lanes



Everett



TSP Corridor Implementation



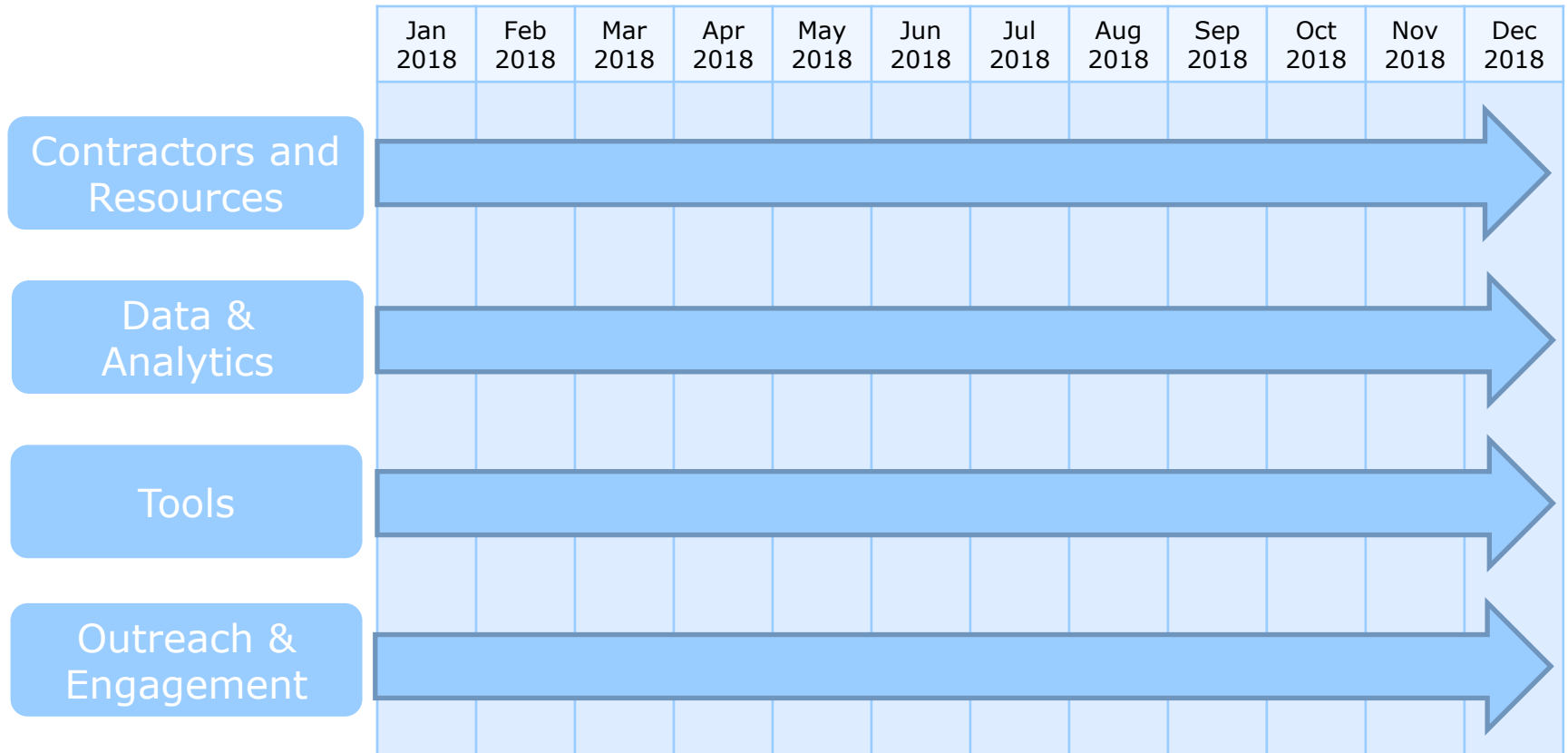
Outreach & Engagement

Introductory and Initial Discussions with:

- Participation and Attendance in Local Transportation Groups -
- Brookline, Cambridge, and Others
- Transportation Advocates
- South Boston Waterfront Working Group
- Lower Mystic Transportation Study Public Forum
- Non Profit Partners - Barr Foundation, A Better City
- Private Partners
- Public Sector Partners - Massport, Boston Convention Center
- Regional Planning Agencies - MAPC
- Municipalities
- Local 589 – Operators, Dispatchers and Inspectors
- Operational Staff – Bus Ops, Planners and Schedulers

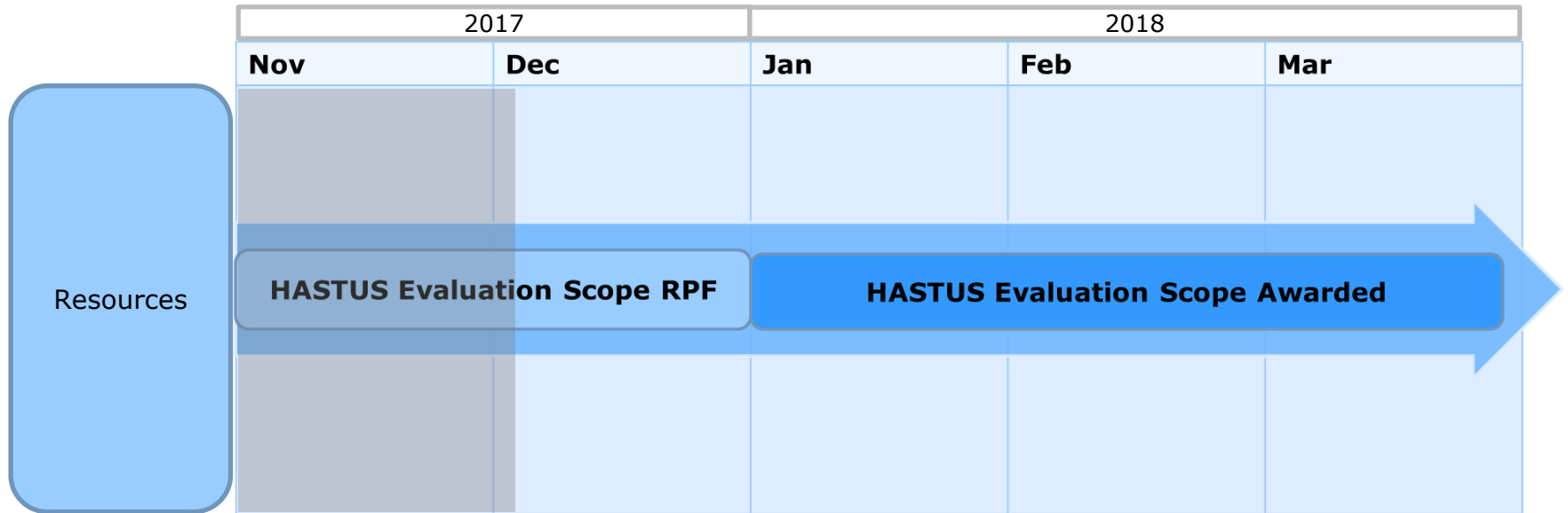


Next Steps, January 2018 – December 2018



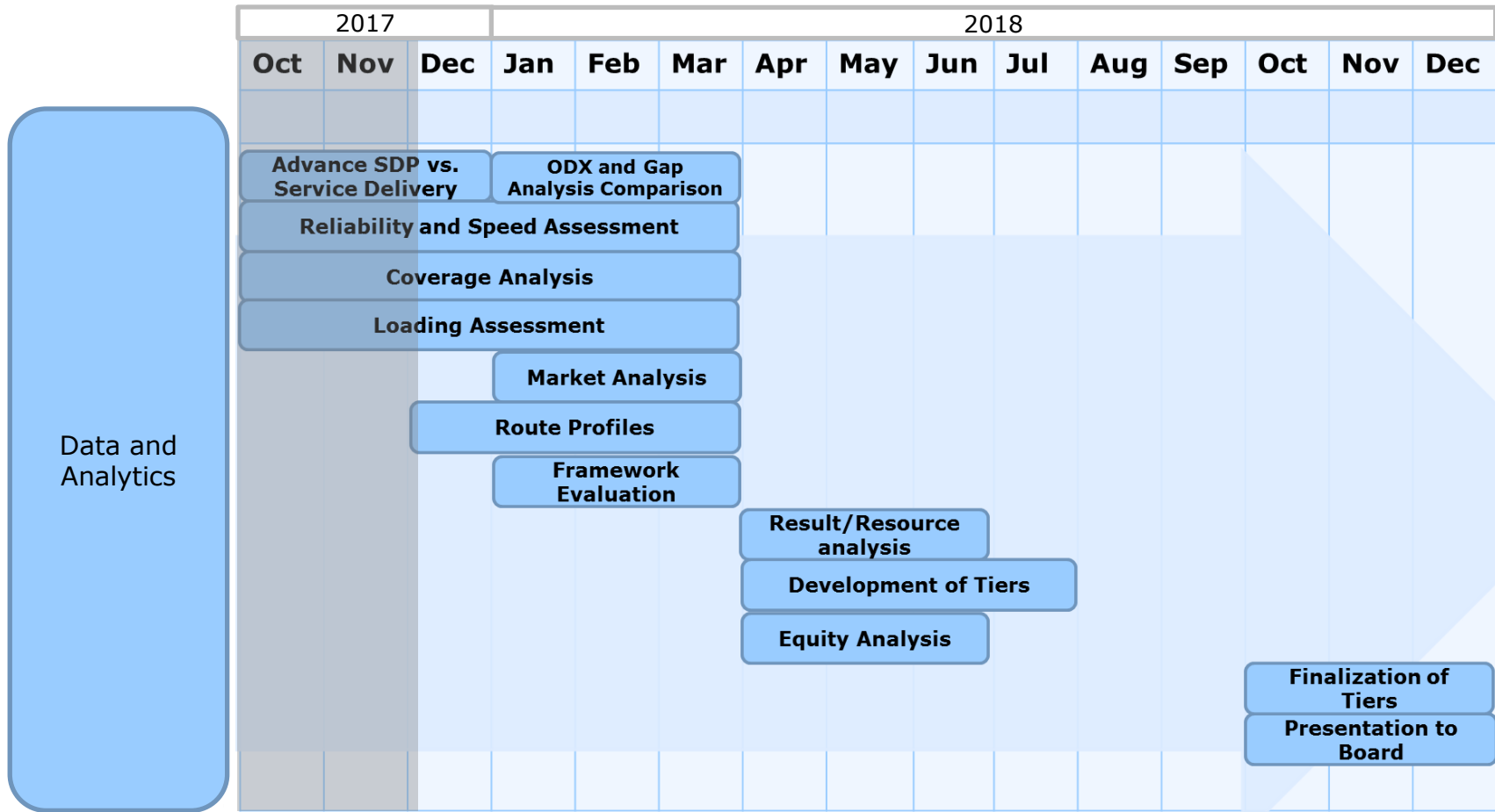


Resources



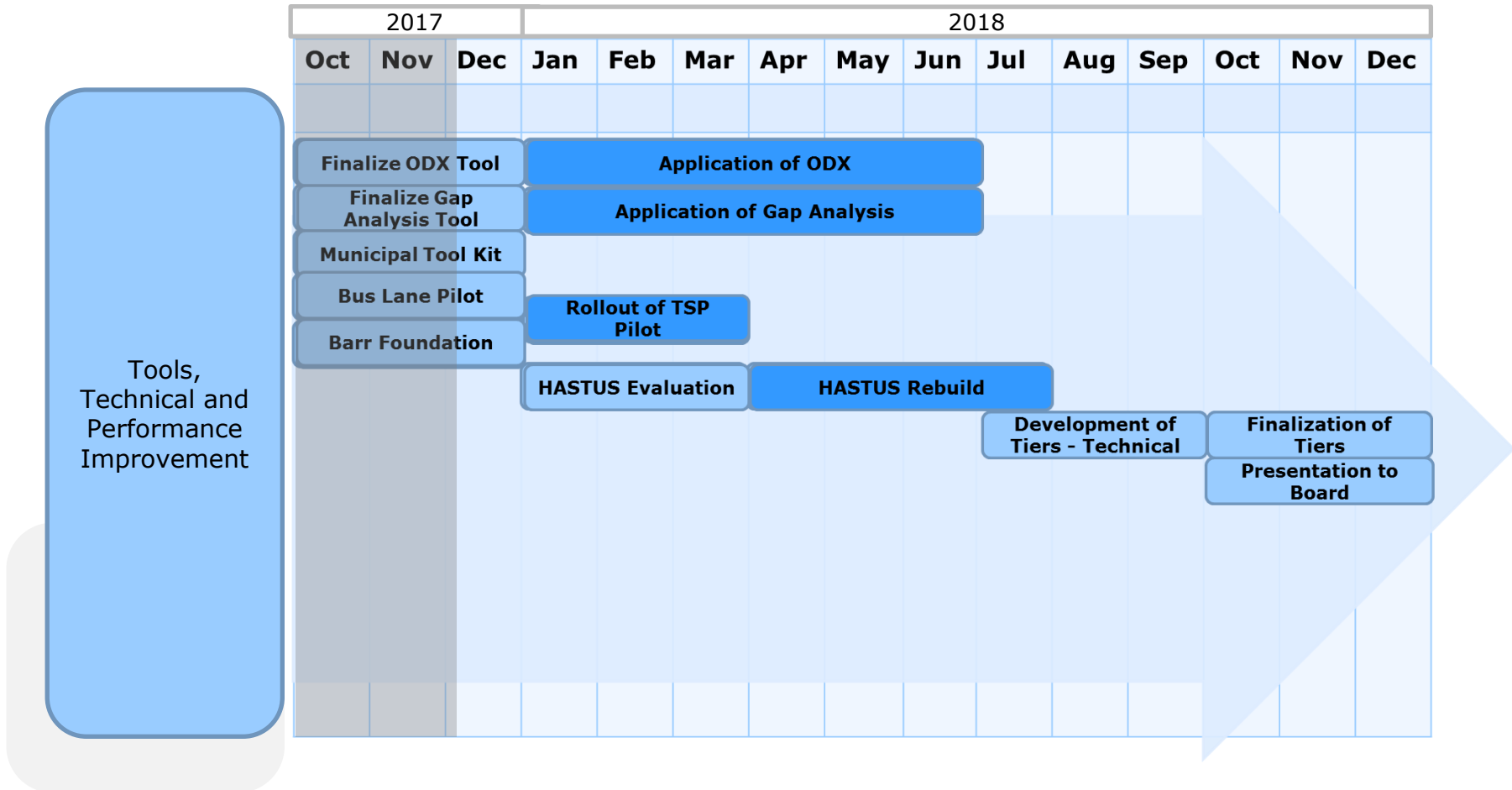


Data & Analytics





Technical & Performance Improvement Tools





Outreach and Engagement





Service Plan, Output



Bus - Service Plan

Service changes to be made by the Service Planning and Schedules Team.

Bus – Optimization Plan

Overall agency efforts that lead to partnerships, investment and larger changes in the existing bus routes.



Service Plan, Implementation

	2018	2019
Service Plan	<ul style="list-style-type: none"> Quarterly Schedule Changes 	<ul style="list-style-type: none"> Quarterly Schedule Changes Significant Changes to Schedules <ul style="list-style-type: none"> Second Quarter – Charlestown/Fellsway, Cabot/Albany and Lynn Third Quarter – Somerville/North Cambridge, Quincy, Arborway/Southampton
Optimization Plan	<ul style="list-style-type: none"> Dedicated Bus Lane Pilots and Implementation TSP Corridor Pilot Development and Planning for Implementation Projects 	<ul style="list-style-type: none"> Dedicated Bus Lane Pilots and Implementation TSP Corridor Pilot Larger Implementation Projects



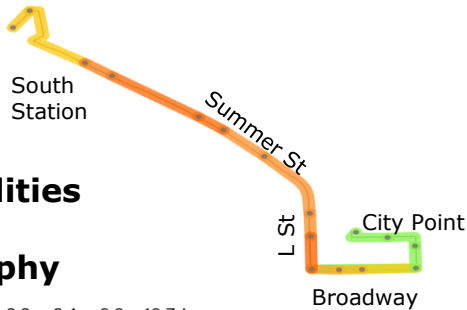
This is a Team Effort

- Customers
- Local 589
- Municipalities
- Non-Profit Foundations
- Public and Private Sector Partners
- Stakeholder Working Groups
- MassDOT Planning Team
- Office of Performance Management and Innovation
- Service Planning and Scheduling
- Office of Technology
- Labor Relations
- Community Affairs



It's Complicated

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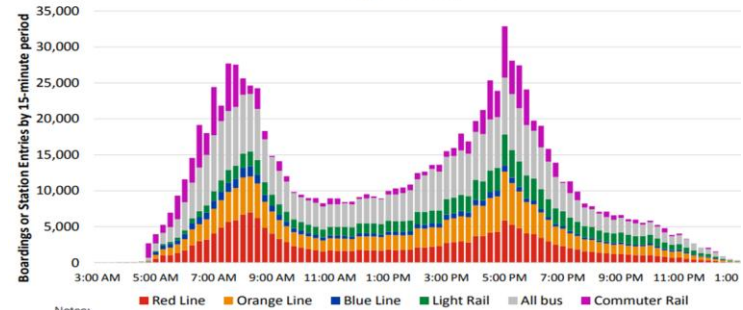


**Municipalities
&
Geography**

0.0 0.4 9.8 19.7 h

Time of day capacity constraints

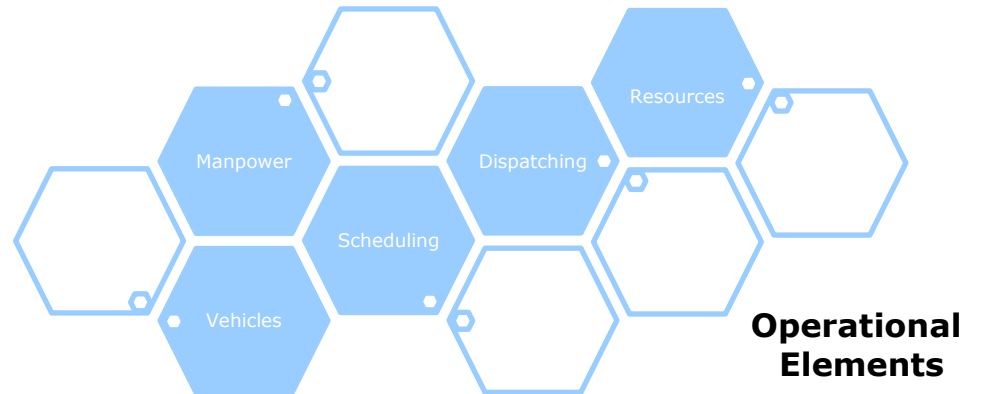
Average weekday FY16



Notes:

- Commuter Rail boardings based on departure time of train from its origin, not actual passenger boarding time
- Commuter Rail counts average of October 3-7, 2016
- Other boardings are average weekday in FY16
- Counts are unadjusted for behind-gate transfers or non-interaction boardings, undercounts morning peak on Light Rail

Source: MBTA AFC system, Keolis conductor counts and train schedule





Presentations to the Board, 2018

- **January 2018 – June 2018, Monthly**
 - Monthly in-depth discussions and demos on specific data, tools, feedback and comments.
- **March 2018**
 - Update on progress, timeline and deliverables. Discussions to highlight data and analysis results, feedback and comments, capital investments, consolidated bus stops, realignment of bus routes, changes across service levels, technological upgrades (hardware and software for intersection traffic lights) and designated bus lanes.
- **June 2018**
 - Further updates on progress, timeline and deliverables, working towards draft recommendations.
- **October 2018 – Draft Tier Recommendation and Feedback**
- **November 2018 – Revised Draft Tier Recommendation and Feedback**
- **December 2018 – Final Tier Recommendation and Board Vote**

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3		\$\$\$

