Massachusetts Bay Transportation Authority

Service Plan Implementation Bus Network
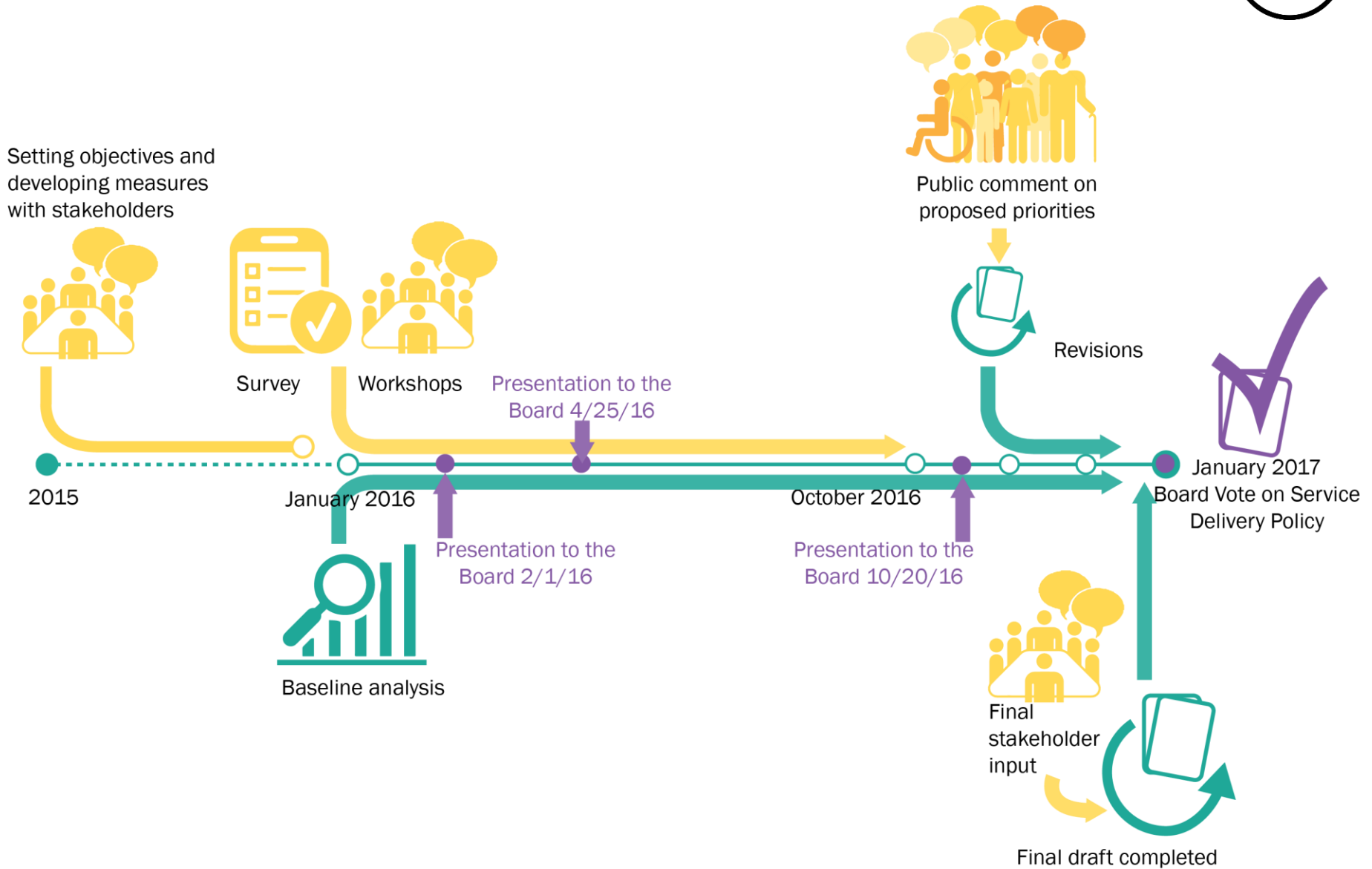
March 27, 2017

CONTEXT

Overview

- The Service Delivery Policy sets how the MBTA evaluates service quality and allocates transit service.

- The Service Delivery Policy was adopted on January 23, 2017.

- Today's discussion will focus on implementation proposals and strategies, including an overall plan and timeline to improve service on existing routes.

- Discussions for consideration:
  - Deliverables, service plan and network optimization
  - Tiered approach for recommendations
  - Timeline and resources

The Process, To Date

Setting objectives and developing measures with stakeholders

Survey

Workshops

Presentation to the Board 4/25/16

Public comment on proposed priorities

Revisions

January 2017
Board Vote on Service Delivery Policy

2015

January 2016

October 2016

Presentation to the Board 2/1/16

Presentation to the Board 10/20/16

Baseline analysis

Final stakeholder input

Final draft completed

SERVICE PLAN
DELIVERABLES

Defining Service Plan Output

Bus - Service Plan

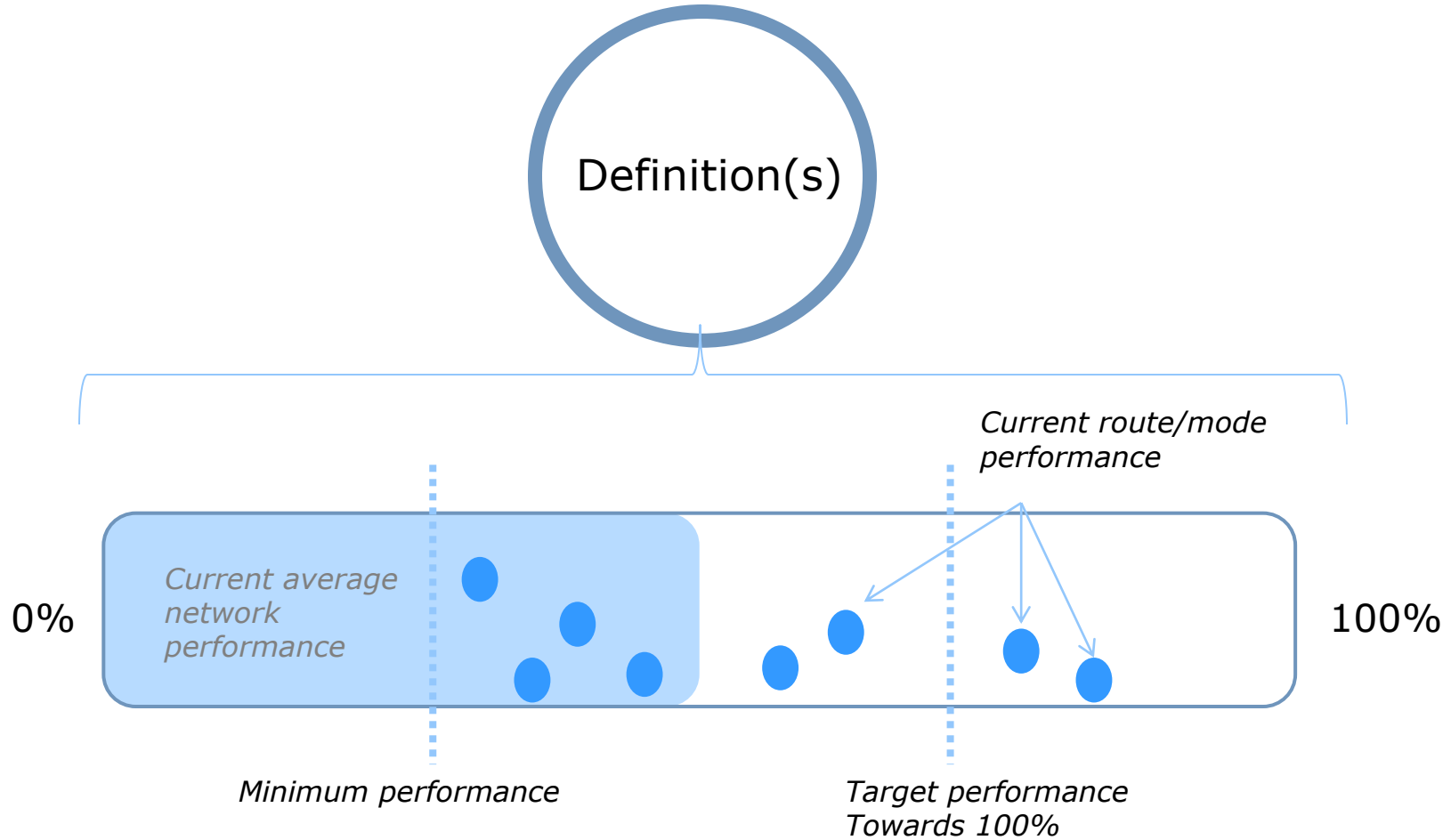Service changes to be made by the Service Planning and Schedules Team.

Bus – Improvement Plan

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

Metrics

Service Objective	Standards	Tools to Address
Service Availability	Span of service Frequency of service Coverage	Service planning
Reliability	Service operated Schedule adherence Passenger wait time	Service planning, operational changes, municipal partnerships
Comfort	Passenger time in crowded conditions	Service planning, operational changes, municipal partnerships
Accessibility	Platform accessibility Vehicle accessibility	Capital budget, operational changes

Scope

Definition(s)

Current route/mode performance

Current average network performance

0%
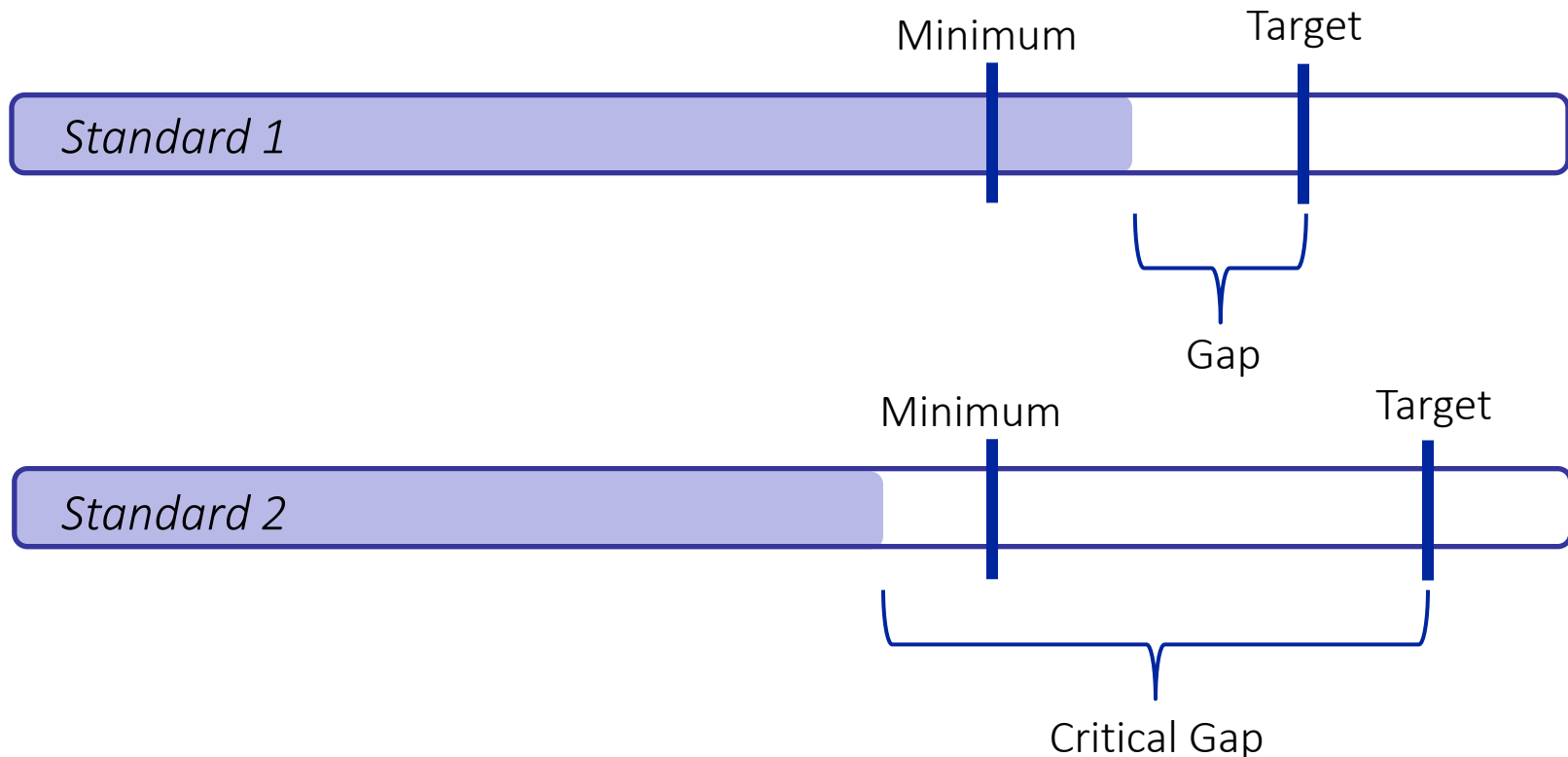
100%

Minimum performance

Target performance
Towards 100%

To be evaluated at the route level

Analysis of Standards

All standards are measured per route and district to identify gaps in performance

Tactical Toolbox
Bus Network Optimization

Service Changes
- Routes alignment and stop spacing
- Frequency and span changes

Operational Changes
- All door boarding and faster fare collection
- Improved dispatching tools and procedures

Partnerships with municipalities
- Bus lanes
- Signal priority and queue jumps

Capital Projects
- Fleet facilities
- Additional buses

Private sector partnerships

Tiered Approach
Bus – Service and Improvement Plans

Tier 1 **GOOD**	Unlikely to meet all Service Delivery Policy Standards, but will support improvements.	Cost Neutral Options
Tier 2 **BETTER**	Will likely meet a subset of the Service Delivery Policy Standards. This tier will require investment and/or partnerships.	$$
Tier 3 **BEST**	Will meet most, if not all, of the Service Policy Standards. This tier will require partnerships and greater investment.	$$$

INPUTS
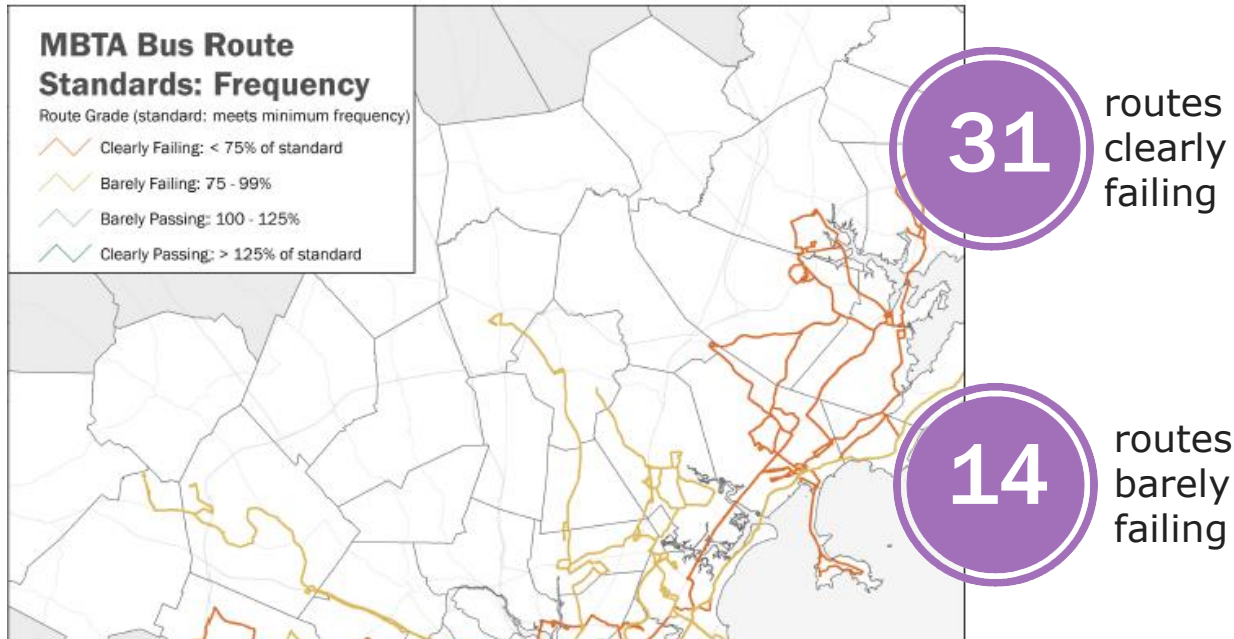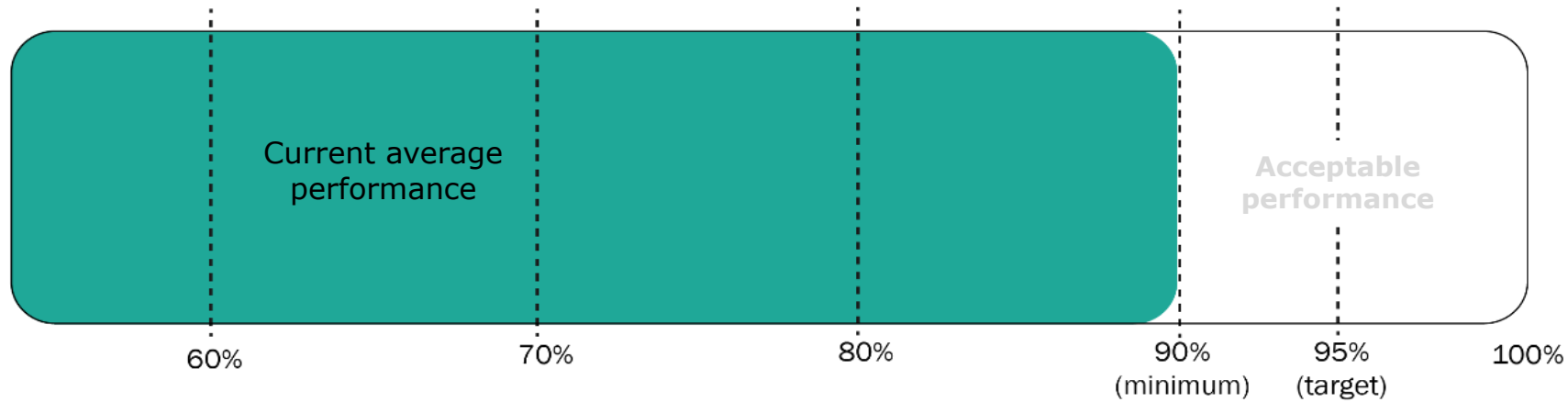
Input 1: Data

Coverage

Span

Reliability

Frequency

Comfort

Input 1: Data Example

Percent of passenger trips during time periods that meet expected frequency

Current average performance

Acceptable performance

60%   70%   80%   90% (minimum)   95% (target)   100%

MBTA Bus Route Standards: Frequency

Route Grade (standard: meets minimum frequency)

— Clearly Failing: < 75% of standard
— Barely Failing: 75 - 99%
— Barely Passing: 100 - 125%
— Clearly Passing: > 125% of standard

31 routes clearly failing

14 routes barely failing

Input 2: Customer and Staff Feedback

- Street Teams to reach out to bus customers at stops and stations

- Existing community groups and transit committees

- Customer surveying

- MBTA bus garage roundtables and other operation channels

- Staff surveys, discussions and interviews

Input 3: Current Initiatives Underway

Bus - Service Plan

- Quarterly

- Rolling Service Changes

- Diversions

Bus – Improvement Plan

- Bus Lane
  - Everett, Boston and Cambridge

- TSP and Signalization
  - Boston and Brookline
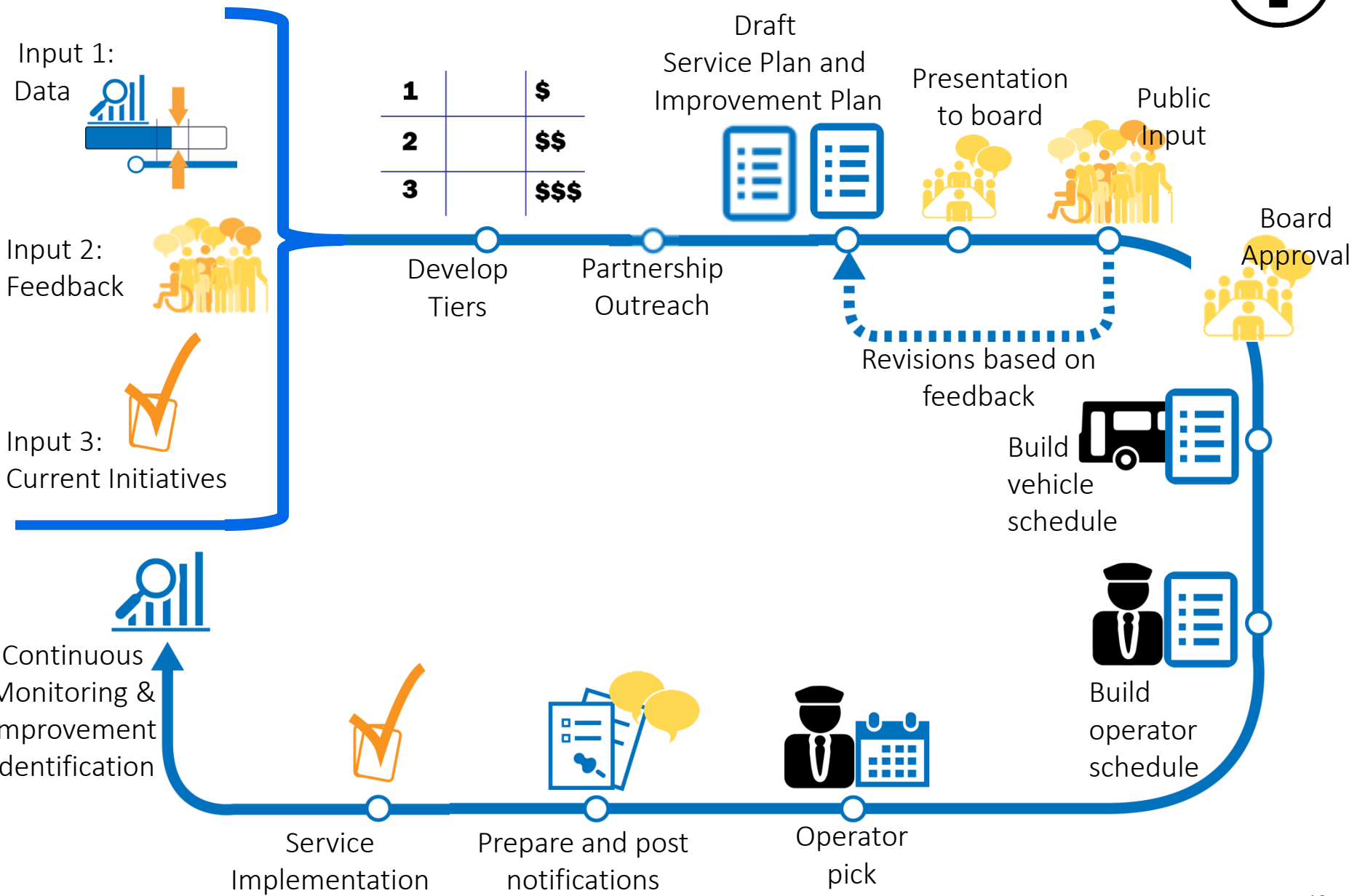
- Public Private Partnerships
  - Kendall Square

TIMELINE AND RESOURCES

Process

Input 1:
Data

Input 2:
Feedback

Input 3:
Current Initiatives

1	$
2	$$
3	$$$

Develop Tiers

Partnership Outreach

Draft
Service Plan and Improvement Plan

Presentation to board

Public Input

Revisions based on feedback

Board Approval

Build vehicle schedule

Build operator schedule

Continuous Monitoring & Improvement Identification

Service Implementation

Prepare and post notifications

Operator pick

Garage(s)	2017				2018				2019					
	1	2	3	4	1	2	3	4	1	2	3	4	1	2
Charlestown/Fellsway				●	●									
Cabot/Albany						●	●							
Lynn								●	●					
Somerville/North Cambridge								●	●					
Quincy												●	●	
Arborway/Southampton												●	●	

● Board Presentation

- 39 month process – First two larger districts separately, then clustered approach

- Assumes $500k consultant support per year, continuously throughout process

- Assumes no additional consulting services or additional staff

Trade Offs

- 3.25 yr rolling schedule

- No additional expertise in-house

19

Option 2: Timelines and Resources

Garage(s)	Year/Quarter											
	2017				2018				2019			
	1	2	3	4	1	2	3	4	1	2	3	4
Charlestown/Fellsway			🔴	🔴								
Cabot/Albany					🔴	🔴						
Lynn							🔴	🔴				
Somerville/North Cambridge							🔴	🔴				
Quincy									🔴	🔴		
Arborway/Southampton									🔴	🔴		

🔴 Board Presentation

- 30 month process – Same approach as Option 1, but expedited due to increased resources

- Assumes $500k consultant support per year, continuously throughout process

- Request of $2.4M over three years for additional consulting

Trade Offs

- 2.5 yr rolling schedule

- No additional expertise in-house

20

Option 3: Timelines and Resources

Garage(s)	Year/Quarter											
	2017				2018				2019			
	1	2	3	4	1	2	3	4	1	2	3	4
Charlestown/Fellsway		🔴	🔴									
Cabot/Albany				🔴		🔴						
Lynn						🔴	🔴					
Somerville/North Cambridge						🔴	🔴					
Quincy							🔴	🔴				
Arborway/Southampton							🔴	🔴				

🔴 Board Presentation

- 21 month process – Same as Option 1 and 2, but expedited due to increased resources

- Assumes $500k consultant support per year, continuously throughout process

- Request of $2.9M over a two years for additional consulting

Trade Offs

- 1.75 yr rolling schedule

- No additional expertise in-house

Option 4: Timelines and Resources
- Recommended -

	Year/Quarter													
	2017				2018				2019					
Garage(s)	1	2	3	4	1	2	3	4	1	2	3	4	1	2
Charlestown/Fellsway			🔴	🔴										
Cabot/Albany			🔴		🔴									
Lynn			🔴		🔴									
Somerville/North Cambridge			🔴		🔴									
Quincy			🔴			🔴								
Arborway/Southampton			🔴			🔴								

🔴 Board Presentation

- 18 months – All districts concurrently, with a staggered roll out

- Assumes $500k consultant support per year, continuously throughout process

- Request of $5M, as a one time infusion

Trade Offs

- 1.5 yr rolling schedule

- No additional expertise in-house

GUIDANCE

Defining Service Plan Output

Bus - Service Plan

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

Bus - Improvement Plan

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

Includes Service Plan + Network Optimization Recommendations

Proposals and Associated Costs

Tier 1 GOOD	Unlikely to meet all Service Delivery Policy Standards, but will support improvements.	Cost Neutral Options
Tier 2 BETTER	Will likely meet a subset of the Service Delivery Policy Standards. This tier will require investment and/or partnerships.	$$
Tier 3 BEST	Will meet most, if not all, of the Service Policy Standards. This tier will require partnerships and greater investment.	$$$

Includes a tiered approach to offer a range of plan and network optimization options and recommendations

Cost neutral changes be made through regularly scheduled service rating changes.

Timeline and Resources

What is the preferred timeline? What resources are available to meet this timeline?

	Option 1	Option 2	Option 3	Option 4
Timeline	39 months	30 months	21 months	18 months
Approach	First two large districts individually, then clusters of two	First two large districts individually, then clusters of two	First two large districts individually, then clusters of two	All Districts, with a staggered roll out
Cost for Initial Analysis & Plan	-	$4.4M (162K/month)	$3.9M (185K/month)	$6.0M (333K/month)
Overall Cost, FY18 to FY23	-	$4.9M	$5.4M	$7.5M
Request, FY18 to FY23	-	$2.4M	$2.9M	$5.0M