

Appendix H

Projects Required for Achieving a State of Good Repair by 2030



The following projects, which are currently unfunded, must be completed to achieve and maintain a state of good repair by 2030. This list does not represent the full universe of projects that will be needed to bring the system into a state of good repair.

REVENUE VEHICLES

- Procurement of 146 New Orange Line #14 Cars (to Replace #12 Cars)
- Procurement of 480 New Buses
- Bi-Level Coach Procurement (85 Coaches to Replace Pullman Fleet and Support Service Expansion)
- Procurement of 74 New Red Line #4 Cars (to Replace #1 Cars)
- Bus (CNG, Diesel and Electric) Midlife Overhaul
- Midlife Overhaul of 25 GP40-MC Locomotives
- Top Deck Overhaul of 37 F40 Locomotives and Upgrade of 25 Engines to Tier 0 Compliance
- Midlife Overhaul of 75 Bi-Level Kawasaki Coaches
- Coach Reliability and Safety Program (CRASP)
- Lease of 20 Passenger Coaches to Support the CRASP and Kawasaki Coach Overhaul Programs
- Green Line: #8 Primary Suspension Overhaul - Safety/Reliability/Comfort

- Orange Line Bearing Overhaul Program
- Green Line: Type 8 Air Compressor Replacement
- Red Line: #1 Car A/C Motor and Compressor Overhaul
- Red Line: #1 Car Inter-Car Cabling and Automatic Train Operation (ATO) Modification
- Ferry Overhauls
- Orange Line: Improve ATO and Speed Sensors on Vehicles
- Coaches 1607 and 1634 Collision Damage Repair
- Red Line: #1 Car End Door Threshold Repair
- Orange Line: Required Upgrade of Air Compressor
- Replace Inverters on Air Conditioning Units of 25 GP40 Locomotives
- Systemwide Tunnel Lighting
- Yard Switch Replacement and Track Reconstruction
- Replace Layover Facility - Franklin
- Subway Facility Enhancement Program
- Crossover Upgrades (Red Line) at Broadway and South Station
- Clayton Street Curve Rehab (Red Line)
- Green Line Frog Replacement Program
- Permanent Snow Fencing
- Layover Capacity Improvements - Bradford
- Green Line: Replace Sidings at Blandford Street and Northeastern University
- Green Line: Wooden Overhead Trough Removal
- Red Line: Upgrade of Crossovers at Broadway Station, South Station, and Kendall Station

NON-REVENUE VEHICLES

- Non-Revenue Replacement Vehicles
- Blue Line: Procure New Trailer for Orient Heights Transportation Office
- Portable Generator Trailer for 350KW Unit
- Red Line: Fork Truck Replacement
- Feasibility Study - Crossovers at Aquarium and Maverick
- Green Line Crossover Study - Commonwealth Avenue and Beacon Street
- Side Track Study (Green Line)
- Expand Midday Storage Facilities for Commuter Rail

TRACK/RIGHT-OF-WAY

- Floating Slabs and Tunnel Leak Repair - Alewife to Harvard
- Rehabilitate Grand Junction Secondary (connecting north and south side commuter rail systems) between the Worcester Line in Allston and the Fitchburg Line in Cambridge
- Install improved pumping station at Natick Station to prevent flooding of tracks
- Ashmont Interlocking Reconstruction
- North Quincy Interlocking Replacement
- Maintenance-of-way (MOW) - Track Division Annual Initiatives Program (i.e., tie replacement, etc.)

SIGNALS

- Upgrade signal system in Tower A interlocking to allow higher safe train speeds into North Station
- Restore fourth main line track from drawbridge over Charles River to junction between the Haverhill and Newburyport/Rockport Lines
- Improve remote control signals and crossovers on the Worcester Line
- Wellington Yard Switch and Cable Replacement (Orange Line)
- Park Street Signal Replacement (Green Line)

- Government Center Signal Replacement (Green Line)
- Boylston Signal Replacement (Green Line)
- Copley Signal Replacement (Green Line)
- Orange Line 14 Signal Upgrade
- Signals Annual Initiatives Program (third-rail heaters, etc.)
- Upgrade Signal System on the West Route Main Line
- Automatic Vehicle Identification on the Mattapan High Speed Line
- Prudential Signal Replacement (Green Line)
- Arlington Signal Replacement (Green Line)
- Airport and Government Center Crossover Control
- Upgrade Signal System from Beverly Junction to Gloucester Draw
- Harvard to Alewife Cable Replacement
- Hynes Convention Center Signal Replacement (Green Line)
- Haymarket Signal Replacement (Green Line)
- Operations Control Center Technology Re-Investment
- Green Line: Next-Generation Signal Study
- Orange Line: Third-Rail Heat for Track 1 between Community College and Wellington
- Orange Line: ATO Controller Test Stand for Safety/Reliability/Productivity (Prototype for Red)
- Interoperability Study - Systemwide Radio Project
- Green Line Study - Collision Avoidance System

COMMUNICATIONS

- Cabot Rapid Transit Unit Substation Circuit Breaker Replacement
- Replace Eight Radio Base Stations

POWER

- AC Cable/Duct Replacement 039-1, 0-39-2, 0-39-3
- AC Cable Duct Bank, Alewife to Porter
- Trackless Trolley Overhead Replacement
- Orange Line DC Breaker Upgrade
- Jet Replacement
- Red Line 480 Volt AC Cable Replacement
- Suspension Renewal - Commonwealth Avenue
- Orange Line 480 Volt AC Cable Replacement
- Wellington and Cabot DC Breakers
- Power Section Modifications
- Blue Line DC Feeder Cable Upgrade
- Systemwide Unit Substation Upgrades
- Replace Unit Substation - Long Wharf
- Haymarket Orange Line Electrical and Lighting System Replacement
- Section Insulator Replacement - Green and Blue Lines
- North Station Panel Board Circuit Breaker Replacement
- Cabot Trolley Bug 600 Volt DC Switchgear
- Harvard Station Feeders and Panel Board Replacement
- Davis Station Feeders and Panel Board Replacement
- 500 Arborway HVAC Upgrades
- Green Line: Chestnut Hill Avenue Catenary Pole Relocation, Signalization, and Switch Design Study
- Green Line Track Switch Heaters
- DC Circuit Trip Settings
- Wellington Transportation AC Replacement
- Wellington & Sullivan Transformer Replacement

- Replace 100 Hz Motor Generator Power Stations

MAINTENANCE FACILITIES

- Orange Line: Infrastructure Required for New #14 Trains
- South Shore Garages
- Green Line: Car Washes - Riverside/Reservoir
- Orange Line: Truing Machine Required for New #14 Cars
- Repair Cabot Bus Garage Roof
- Wellington Carhouse Roof
- Mattapan Facility Upgrade
- Subway: Upgrade of All Carwashes
- Systemwide Vehicle Washer Upgrade
- Wellington Carhouse Sprinkler/Fire Alarm Upgrade
- Green Line: Riverside, Reservoir, and Lake Street Storage and Work Platform Mezzanine
- Red Line: Overhead Hoist Equipment Overhaul
- Cabot Yard Fire and Domestic Water Main Replacement
- MOW Storage Silo Replacement
- Orient Heights Car Yard and Maintenance Facility, Phase II
- Replace HVAC System - Wellington Carhouse
- Riverside Carhouse Upgrades
- Subway: Install and Update Lighting in All Yard Areas for Safety
- Everett Shops Improvement
- Everett: Replacement of Critical Machine Shop Equipment Lacking Required Safety Devices
- Wellington Signal Tower - HVAC Replacement
- Bus Wash Water Recycling
- Commuter Rail Maintenance Facility/Boston
- Engine Terminal (CRMF/BET) Leak Detection & Fuel/Water Line Replacement
- Replace Everett Compressor System
- Repair Water Main at Southside Service and Inspection Facility (S&I)
- Charlestown Bus Storm Drain System Repairs
- Everett: Replacement of Six Unreliable and Unsafe Overhead Cranes
- Everett: Critical Support Equipment Replacement for General Shop Services
- Reservoir Roof
- Mystic Junction Tank Removal
- Green Line: Yard Technology Study
- Modify CRMF Air Brake Room
- Rehabilitation of the Cathodic Protection System at South Side S&I
- Everett: Sandblast Booth for the Motor Room
- Orange Line: Procure a Parts Washer
- Orange Line: Install New Carhouse Security Doors: Study Door Re-Design

STATIONS

- New Emergency Smoke Vent Shafts in Downtown Crossing
- Station Rehabilitation & Enhancement Program
- Orient Heights Station Project
- Subway Stations Ventilation Improvements Program
- Back Bay Vent Fan Upgrade
- Southwest Corridor Orange Line Station Platform Repairs
- Kenmore Station Light Rail Accessibility Program and Surface Improvements
- Blue Line Platform Repairs
- Harvard Square Station Pavement Safety Improvement

- Safety Hazard Mitigation of Systemwide Busways
- Roxbury Crossing Station Roof
- Jackson Square Station Roof
- Oak Grove Station Pedestrian Walkway
- Massachusetts Avenue Roof Replacement
- Sullivan Square Station Pavement Safety Improvement
- Reconstruction of Wollaston Lobby Drains
- Charles/MGH Station Accessibility and Modernization
- Replace Two Mini-High Platforms at Mansfield Station
- Maverick Square Station and Blue Line Vents
- Suffolk Station Footbridge and Ramps
- Braintree Lobby Floor Drains
- JFK Station Footbridge and Ramps
- Forest Hills Gutter and Roof System
- Alewife Emergency Ventilation Maintenance
- Systemwide Platform Ventilation Fans
- Improve Air Quality at Back Bay Station: Engineering Study
- Seven Station Engineering Study
- Bus Sign Reprogramming Process Efficiency Improvement
- Back Bay Station Expansion-Joint Replacement
- Courthouse - World Trade Center Headhouse Ventilation
- Replace the Stairways to the Platform at Newtonville Station
- Replace the Platform Pavement at Sharon Station
- Lighting Repairs at Back Bay Station Tracks 5 and 7

- Replace the Platform Pavement at Melrose Highlands Station
- Replace the Platform Pavement at Waverly Station
- Alewife Station Lobby Ventilators
- Green Line: Station Ventilation Technology Survey

FACILITIES

- Lighting - Systemwide Parking Lots
- Systemwide Busway Rehabilitation
- Storm Drain Replacement
- Quincy Center Retaining Wall Repairs
- Drainage System Repairs - Systemwide
- Red Line Sound Wall Repairs
- McSweeney Building Roof
- Systemwide Restroom Upgrade
- Systemwide Bird Control
- Systemwide Sprinkler Upgrade
- Hingham Commuter Boat Dock Replacement
- Systemwide Overhead Door Replacement
- Emergency Repair Services - Structural and General
- 45 High Street HVAC Upgrades
- 500 Arborway Roof
- Station Sewage Ejector Renovations
- Emergency Generator System Upgrades
- Systemwide Crossover Lighting Program
- Green Line: Improve Employee Facilities at Reservoir and Riverside
- Red Line: Upgrade Locker Room Facilities in Carhouse
- Route 3 Braintree Parking Lot Status Signs

- 1000 kw Portable Generator for 45 High Street
- CNG Detector - Alarm System Upgrades
- Special High-Reach Lifts for Electrical Maintenance
- Blue Line: Upgrade Bathrooms at Bowdoin Station

BRIDGES

- Reconstruction/Rehab of Gloucester Draw-bridge, Draw 1 East and West, and Savin Hill Underpass
- Merrimack River Bridge
- Construction/Rehab of Two Bridges: Beverly Draw and Shawsheen River
- Construction/Rehab of Three Bridges: Dean Road and Two Neponset River Bridges
- West Street Bridges
- Mechanical and Electrical Upgrade of Beverly Drawbridge
- Newport Avenue (Route 1A) Bridge Sidewalk Modification and Pedestrian Overpass Replacement
- Orange Line: Infrastructure Study on Dana Bridge

ACCESSIBILITY

- Auburndale Commuter Rail Station Accessibility Improvements
- ADA Compliance - Green Line Track/Platforms
- Platform Edge/Detectable Warning Repairs/Replacements - Systemwide
- Station Accessibility Enhancement
- Mobile Wheelchair Lifts Replacement
- Subway: Station Accessibility Train/Platform Bridgeplates Design

TECHNOLOGY

- Computer Technology Upgrade/Expansion

- Payment Card Industry and Data Security Standard Compliance
- PeopleSoft Timekeeping Project
- Absence Management Module in PeopleSoft Personnel Software
- Integration of Contract Management System with PeopleSoft
- Database Technology Standardization
- Data Transfer Initiative
- Business Center with State Compass Purchasing System
- Biometric Timeclocks
- Custom Trip Planner
- Bus and Subway Maintenance Portals and Kiosks
- Procurement and Installation of Maintenance System Portal
- Data Center Upgrades
- Bus Operations Vehicle Maintenance Software Upgrade
- MBTA Website Upgrades
- Replacement of Voice Mail System
- PeopleSoft-Payroll E-Pay Project