

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. (Note: 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 25 GP40-MC Locomotives
- Midlife Overhaul of 75 Bi-Level Kawasaki Coaches
- Top Deck Overhaul of 37 F40 Locomotives and Upgrade of 25 Engines to Tier 0 Compliance
- Coach Reliability and Safety Program (CRASP)
- Green Line: #8 Primary Suspension Overhaul - Safety/Reliability/Comfort
- Lease of 20 Passenger Coaches to Support the CRASP and Kawasaki Coach Overhaul Programs

- 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 ATO Modification
- Ferry Overhauls (New Need)
- 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
- Replace Layover Facility - Franklin
- Subway Facility Enhancement Program
- Crossover Upgrades (Red Line) at Broadway and South Station
- Haverhill/Plaistow Commuter Rail Station and Layover Facility
- Clayton St. Curve Rehab (Red Line)
- Green Line Frog Replacement Program
- Permanent Snow Fencing
- Layover Capacity Improvements - Bradford
- Green Line: Replace Sidings at Blandford St. 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
- Non-Revenue Vehicles--Power
- Non-Revenue Vehicles--Operations Support
- 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 Ave. and Beacon St.
- Side Track Study (Green Line)
- Expand Midday Storage Facilities for Commuter Rail

SIGNALS

TRACK/RIGHT-OF-WAY

- Floating Slabs and Tunnel Leak Repair - Alewife to Harvard
- Ashmont Interlocking Reconstruction
- North Quincy Interlocking Replacement
- MOW - Track Div. Annual Initiatives Program (i.e., tie replacement, etc.)
- Systemwide Tunnel Lighting
- Yard Switch Replacement and Track Reconstruction
- Wellington Yard Switch and Cable Replacement (Orange Line)
- Park St. Signal Replacement (Green Line)
- Government Ctr. 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

- AVI & Mattapan High Speed Lines
- Prudential Signal Replacement (Green Line)
- Arlington Signal Replacement (Green Line)
- Airport & 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)
- OCC 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
- 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 VDC Switchgear
- Harvard Station Feeders and Panel Board Replacement
- Davis Station Feeders and Panel Board Replacement
- 500 Arborway HVAC Upgrades
- Green Line: Chestnut Hill Ave. CAT Pole Relocation, Signalization, and Switch Design Study
- Green Line Track Switch Heaters

COMMUNICATIONS

- Cabot RTL Unit Substation CB 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 VAC Cable Replacement
- Suspension Renewal - Commonwealth Avenue
- Orange Line 480 VAC Cable Replacement

- 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
- Cabot Bus Storage and Repair 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
- M.O.W. 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
- CRMF/BET Leak Detection & Fuel/Water Line Replacement (Additional Funding Required)
- Replace Everett Compressor System
- Repair Water Main at Southside 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
- Government Center
- Station Rehabilitation & Enhancement Program
- Orient Heights Station Project
- Subway Stations Ventilation Improvements Program
- Back Bay Vent Fan Upgrade
- Rockport Commuter Rail Station
- SWC Station Platform Repairs
- Kenmore Station LRAP and Surface Improvements
- Blue Line Platforms Repair
- 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
- Mass. 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 Fan FMP Control
- Systemwide Platform Ventilation Fans
- Orange Line: 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 - WTC 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
- 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
- 45 High Street HVAC Upgrades
- Emergency Repair Services - General
- 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 St.
- CNG Detector - Alarm System Upgrades
- Special High-Reach Lifts for Electrical Maintenance
- Blue Line: Upgrade Bathrooms at Bowdoin Station

FACILITIES

- Lighting - Systemwide Parking Lots
- Systemwide Busway Rehabilitation
- Storm Drain Replacement
- Quincy Center Retaining Wall Repairs

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 & Two Neponset River Bridges
- West Street Bridges
- Mechanical and Electrical Upgrade of Beverly Drawbridge
- Newport Avenue (Route 1A) Bridge Sidewalk Modification 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 (Joint with D&C)
- Mobile Wheelchair Lifts Replacement
- Subway: Station Accessibility Train/Platform Bridgeplates/New Design

TECHNOLOGY

- Computer Technology Upgrade/Expansion
- Payment Card Industry & Data Security Standard Compliance
- PeopleSoft Timekeeping Project
- Absence Management Module in PeopleSoft HCMS
- Integration of CMS 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 & Installation of Maintenance System Portal (MCRS2)
- Data Center Upgrades
- Bus Operations Vehicle Maintenance Software Upgrade
- MBTA Website Upgrades
- Replacement of Voice Mail System
- PeopleSoft Payroll E-Pay Project

EXPANSION

- Silver Line III
- Procurement of 40 New Green Line #9 Cars (Green Line Extension Effort)

PLANNING & DEVELOPMENT

- Ruggles Station Platform Capacity Analysis
- Fairmount Service Extension Study
- Haverhill Line Improvements Analysis
- Franklin-Forge Park Commuter Rail Improvements Analysis

ENHANCEMENT

- AFC Phase II - To include commuter rail, ferry boat and parking facilities
- Double Track the Fitchburg Main Line - South Acton to Willows
- Wellington Bus Maintenance Facility and Parking Garage Project
- Construction of Additional Tracks at South Station
- Hybrid Bus Evaluation (Series and Parallel Configuration)
- Green Line: Upgrade Six Crossovers to High Speed Crossovers (from 10/25 mph to 50 mph)
- Double-Track Haverhill Main Line: Wilmington Junction to Lowell Junction
- Green Line Next-Train-Notification Project
- Subway: Add Amenities to Create "Preferred Boarding Locations" on Platforms

- Double-Track through Reading Station
- North Quincy to Braintree Fiber Optic Network Extension
- WAN Connectivity
- Orange/Red Line: Infrastructure Condition Monitoring System
- Red Line: Clean Room and Overhaul Storage
- Green Line: Trolley Training Simulator
- Systemwide Radio Expansion to Route 495
- CRMF - Paint Shop
- Orange Line: Additional Hoist Required for New #14 Cars
- Green Line: Portable Lift Upgrade
- Red Line: Additional Crossover for Braintree Branch to Ashmont Branch
- Locomotive Wash Facility
- Litter Vacuum and Power Sweeper
- Subway: Procure Unpowered Pushcarts for Emergency Evacuations and Derailments
- Subway: Heavy Rail Platform/Train Gap: Innovative Compliance Diagnostics/Solutions
- Green Line: Fenway Station Spur Track
- Red Line: Paint Booth Replacement - Safety/Environmental
- 60' CNG Fuel Efficiency Improvement
- Everett: Coordinate Measuring Machine
- Blue Line: Procure Mezzanines to Work on Rooftop Components of Number Five Car
- Bicycle Parking Cages
- Modifications and Completion of Environmental Protective and Fire Suppression Systems, S & I Facility
- Subway: Upgrade Lighting and Shelters for Employee Safety during Hand Throw Operation
- Capital Spares Building
- Completion of Bicycle Rack Program
- Blue Line: Power Up Crossover for Remote Control at Airport and Government Center
- Red Line: 3rd-Rail Covers Design/Engineering
- Red Line: 3rd-Rail Covers Procurement
- WTC Boat Ramp/Barrier/Platform Modifications
- Electro-Pneumatic Brake System Analysis and Reactivation
- Readville Layover Drip Pans, Piping and Oil / Water Separator
- Long-Term Maintenance and Storage (Orient Heights)
- Audible Warning Device
- Command Bus Replacement Upgrade
- Fire Protection System for the Plan Room and Dispatching Area at Cobble Hill
- Subway: Protran ROW Safety Warning Devices
- Blue Line: Items That Were Left Off of Phase 2 Construction at Orient Heights Carhouse
- Green Line: Automatic Speed Indicator Signs
- Red Line: Dry Ice Machine for Cleaning Propulsion Control Cases
- Orange Line: Procure Paint Prep Booth
- Red Line: Small Building for Braintree to House Maintenance Personnel
- Route 39 Transit Corridor Improvements (Design)
- Orange/Red Line: ATO Temporary Speed Restriction Tags - Preliminary Engineering
- Blue Line: Climate-Controlled Trailer for Storage
- Construction of Hazardous-Materials Storage Area