# Transportation Mode Shift Gap Analysis

## Current Vision vs. Broader Best Practices and Massachusetts Policy

### Executive Summary

This gap analysis compares the current transportation mode shift vision document with broader transportation best practices and Massachusetts state policies. While the document addresses many key elements of transportation electrification, significant gaps exist in areas of comprehensive planning, equity considerations, funding strategies, and alignment with state climate goals.

## 1. BROOKLINE’S CURRENT ACCOMPLISHMENTS AND STRENGTHS

### ✓ COMPLETED OR IN PROGRESS (2024-2025)

**Climate Action Framework:**

- ✅ **Zero Emissions Advisory Board (ZEAB)**: Reconstituted in 2024 with clear mandate for net-zero by 2040

- ✅ **2025 Climate Action and Resiliency Plan (CARP)**: Under development with public engagement (600+ survey responses)

- ✅ **Fossil Fuel-Free Building Regulations**: Implemented February 2024 for new construction

- ✅ **Environmental Justice Focus**: ZEAB charter explicitly includes environmental justice considerations

**EV Charging Infrastructure:**

- ✅ **Soule Recreation Center**: Construction complete, energizing July 2025

- ✅ **Skyline Park**: Construction complete, anticipated completion August 2025

- ✅ **Curbside Level 2 Charging Grant**: Secured funding for 3-5 locations, public engagement Summer 2025

- ✅ **Electrify Brookline Campaign**: Town-wide neighborhood-based electrification initiative

**Active Transportation:**

- ✅ **Complete Streets Policy**: Adopted with Transportation Board implementation planning

- ✅ **Washington Street Redesign**: Select Board approved major reconstruction with protected bike lanes (Beacon St to Brookline Village), construction target Fall 2027

**Institutional Capacity:**

- ✅ **Transportation Board**: Established governance structure

- ✅ **Engineering and Transportation Division**: Developing Complete Streets Priority List

- ✅ **Director of Sustainability**: Dedicated staff position coordinating with ZEAB

### ✓ Areas Well-Addressed in Original Vision

* **Vehicle Electrification Focus**: Strong emphasis on transitioning to electric vehicles across personal, municipal, and transit sectors
* **Charging Infrastructure Planning**: Detailed consideration of various charging scenarios (public, private, multi-unit)
* **Multi-Modal Approach**: Recognition of walking, biking, and micromobility alternatives
* **Municipal Fleet Consideration**: Includes police, street sweepers, and maintenance equipment
* **Practical Implementation**: Acknowledges real-world constraints (e.g., 24/7 police vehicle operations)

## 2. CRITICAL GAPS IDENTIFIED

### A. POLICY ALIGNMENT GAPS

#### Massachusetts State Requirements Missing:

* **No mention of state climate mandates**:
  + 2025 goal: 200,000 EVs registered (current: ~66,000)
  + 2030 Clean Energy and Climate Plan targets
  + 2050 net-zero emissions goal
* **Missing MBTA coordination**:
  + State’s Bus Electrification Plan (full fleet by 2030 advocacy)
  + Fairmount Line electrification (first commuter rail, operational 2028)
  + $8 billion state transportation investment plan (announced January 2025)
* **Absent funding mechanisms**:
  + Federal CFI grants ($14.4M for MassDOT/MBTA charging)
  + EPA Low-No Emissions grants ($40M for MBTA buses)
  + State incentive programs for EV adoption

### B. COMPREHENSIVE PLANNING GAPS

#### 1. **Land Use and Development Integration**

**Missing Elements:** - Transit-Oriented Development (TOD) strategies - 15-minute city principles for reducing trip necessity - Zoning reform for mixed-use development - Housing-transportation coordination

**Why It Matters:** Research shows TOD can reduce VMT by 20-40% and cut traffic fatalities by 10-40%

#### 2. **Complete Streets and Vision Zero**

**Missing Elements:** - Comprehensive street design standards for all users - Speed management strategies (25 mph limits, traffic calming) - Safety metrics and crash reduction targets - Vulnerable road user protections

**Why It Matters:** Vision Zero cities have seen 35% reduction in traffic deaths through systematic safety approaches

#### 3. **Regional Connectivity**

**Missing Elements:** - Inter-municipal coordination strategies - Regional transit connections beyond MBTA - First/last mile solutions - Park-and-ride integration

### C. EQUITY AND ACCESSIBILITY GAPS

#### Progress Made:

* ✅ **Environmental Justice considerations**: ZEAB charter explicitly includes environmental justice focus
* ✅ **Community engagement**: 600+ residents participated in CARP survey process

#### Remaining Gaps:

* **Accessibility requirements**: ADA compliance for new infrastructure
* **Affordability measures**: EV adoption assistance for low-income residents
* **Service equity**: Transit access in underserved areas
* **Language access**: Multi-lingual outreach and education

### D. IMPLEMENTATION FRAMEWORK GAPS

#### 1. **Metrics and Monitoring**

**Missing:** - VMT reduction targets and tracking - Mode share goals and measurement - GHG emission reduction quantification - Progress reporting mechanisms - Data collection systems

#### 2. **Timeline and Phasing**

**Missing:** - Specific implementation milestones - Priority project sequencing - Quick-build/pilot project opportunities - Alignment with state climate deadlines

#### 3. **Stakeholder Engagement**

**Missing:** - Public participation process - Business community involvement - Regional planning coordination - Youth and senior engagement strategies

### E. TECHNOLOGY AND INNOVATION GAPS

#### Emerging Solutions Not Addressed:

* **Mobility as a Service (MaaS)** platforms
* **Autonomous vehicle** preparation
* **Dynamic pricing** for parking/congestion
* **Real-time transit information** systems
* **Shared mobility** integration (car-share, bike-share)
* **Digital infrastructure** for smart transportation

### F. RESILIENCE AND ADAPTATION GAPS

#### Climate Resilience Missing:

* Flood-resistant charging infrastructure
* Extreme weather service continuity plans
* Grid reliability and backup power
* Heat island mitigation in transportation corridors
* Emergency evacuation considerations

## 3. SPECIFIC MASSACHUSETTS POLICY GAPS

### Recent State Initiatives Not Referenced:

1. **Commission on Future of Transportation** (2024 recommendations)
   * Not incorporated into local planning
2. **Beyond Mobility** framework
   * Missing emphasis on accessibility over mobility
3. **Clean Energy and Climate Plan 2025/2030**
   * No alignment with state decarbonization pathway
4. **MassDOT Mode Shift Grant Program**
   * No mention of available funding opportunities
5. **Massachusetts Climate Assessment** requirements
   * Missing vulnerability assessment
   * No adaptation planning

## 4. RECOMMENDED ADDITIONS

### Priority 1: Immediate Integration Needs

1. Establish VMT reduction targets aligned with state goals
2. Create equity framework with environmental justice screening
3. Develop performance metrics and reporting dashboard
4. Integrate Complete Streets policy
5. Align with state 2025 EV targets

### Priority 2: Near-term Planning Elements

1. Develop Transit-Oriented Development strategy
2. Create Vision Zero action plan
3. Establish regional coordination mechanisms
4. Design comprehensive public engagement process
5. Integrate climate resilience planning

### Priority 3: Long-term Vision Elements

1. Plan for autonomous vehicle integration
2. Develop 15-minute neighborhood framework
3. Create innovation pilot program
4. Establish mobility hub network
5. Design integrated payment systems

## 5. FUNDING AND RESOURCES

### Untapped Funding Sources:

* **Federal:**
  + Infrastructure Investment and Jobs Act programs
  + Inflation Reduction Act clean energy incentives
  + RAISE and INFRA grants
* **State:**
  + MassEVIP (Massachusetts Electric Vehicle Incentive Program)
  + Green Communities grants
  + Complete Streets Funding Program
  + MassDOT Shared Streets and Spaces grants
* **Regional:**
  + Metropolitan Planning Organization funding
  + Regional Transit Authority partnerships

## 6. REGIONAL COMPARISON: NEIGHBORING MUNICIPALITIES

### A. BOSTON: COMPREHENSIVE REGIONAL LEADER

#### Major Initiatives (2024-2025):

* **Go Boston 2030 ReVisioned**: Over 50% of 58 projects completed or in design
* **2030 Climate Action Plan**: Final plan to be released Fall 2025, targeting 50% reduction in car trips by 2030
* **Blue Hill Avenue Redesign**: Center-running bus lanes serving 37,000 daily riders
* **EV Infrastructure**: 20 electric school buses deployed, curbside charging stations launched Spring 2024
* **Protected Bike Network**: Rapid expansion on Summer Street, Commonwealth Avenue, Beacon Street
* **Neighborhood Slow Streets**: Systematic traffic calming implementation

#### Key Lessons for Brookline:

* **Regional coordination**: Boston’s plan explicitly targets reducing car trips, not just electrifying them
* **Bus priority infrastructure**: Dedicated bus lanes create faster, more reliable transit
* **Quick-build methodology**: Rapid deployment of safety improvements while planning permanent infrastructure
* **Comprehensive planning**: Integration of climate, safety, and equity goals in single framework

### B. CAMBRIDGE: PROTECTED INFRASTRUCTURE PIONEER

#### Major Initiatives (2024-2025):

* **Cycling Safety Ordinance**: Mandates 25 miles of separated bike lanes by 2027 (13.77 miles completed as of May 2024)
* **Political challenges**: 2024 City Council vote to delay some projects due to parking concerns
* **Parking policy reform**: Exploring off-site parking sharing, maximum parking requirements
* **Business district analysis**: Less than 1/3 of customers arrive by car to business districts

#### Key Lessons for Brookline:

* **Legislative mandates**: Ordinance-based requirements create accountability but need political sustainability
* **Parking conflicts**: Need proactive strategy to address business/resident parking concerns
* **Data-driven decisions**: Regular monitoring of business impacts and customer travel patterns
* **Protected infrastructure**: Separated bike lanes significantly increase ridership and safety

### C. NEWTON: INSTITUTIONAL COORDINATION

#### Major Initiatives (2024-2025):

* **Bike/Ped Network Plan**: Implementation-focused blueprint completed early 2024
* **Complete Streets Policy**: Adopted 2016, consistently applied to roadway decisions
* **EV Taskforce**: Dedicated group addressing 35% of city emissions from passenger vehicles
* **Fossil Fuel-Free Ordinance**: 2024 adoption for new buildings
* **BERDO**: Building emissions ordinance signed January 2025

#### Key Lessons for Brookline:

* **Institutional framework**: Dedicated taskforces and advisory committees drive consistent progress
* **Building-transportation nexus**: Coordinating building emissions with transportation planning
* **Implementation focus**: Moving from planning to actionable projects
* **State program participation**: Active engagement with state initiatives (Ten Communities Program)

### D. SOMERVILLE: RAPID DEPLOYMENT MODEL

#### Major Initiatives (2024-2025):

* **Aggressive bike lane installation**: 1.33 miles in 2024, 3.28 miles planned for 2025
* **McGrath Highway project**: Major protected bike lane installation as part of road reconstruction
* **Quick-build projects**: Glen & Otis Street Neighborway connecting schools
* **Climate-integrated planning**: Highland Avenue reconstruction debates reflect climate priorities vs. parking

#### Key Lessons for Brookline:

* **Opportunity-based implementation**: Using infrastructure projects to add bike/pedestrian facilities
* **School connectivity**: Prioritizing safe routes to schools as community priority
* **Climate goal integration**: Explicitly considering climate targets in infrastructure decisions
* **Rapid deployment**: Quick-build approaches for immediate safety improvements

### E. SURROUNDING TOWNS: EMERGING EFFORTS

#### Watertown:

* **Comprehensive planning**: Bicycle & Pedestrian Plan adopted 2021
* **All-ages infrastructure**: Focus on accessibility for all abilities

#### Dedham:

* **Pilot projects**: Lane narrowing study on Needham Street (13’ to 10’ lanes)
* **Data-driven approach**: Measuring results before permanent changes
* **Bike lane integration**: Planning 5’ bike lanes with narrowed vehicle lanes

#### Needham:

* **Complete Streets implementation**: Multiple projects with protected crossings and bike lanes
* **School safety priority**: Protected crossings at schools (Harris Avenue)
* **Systematic approach**: Consistent 10-11’ travel lanes with 5’ bike lanes

#### Key Lessons for Brookline:

* **Pilot methodology**: Testing changes before permanent implementation reduces political risk
* **School-centered approach**: Safe routes to schools as non-controversial starting point
* **Standardization**: Consistent lane widths and bike lane dimensions across projects

## 7. BROOKLINE-SPECIFIC GAPS AND OPPORTUNITIES

### A. GAPS COMPARED TO REGIONAL LEADERS

#### 1. **Legislative Framework Gaps**

* ✅ **Progress Made**: Complete Streets Policy adopted with Transportation Board implementation
* **Remaining Gap**: No transportation ordinance with specific mode shift targets like Cambridge’s Cycling Safety Ordinance
* **Opportunity**: Create Brookline Transportation Safety Ordinance building on Complete Streets foundation

#### 2. **Regional Coordination Gaps**

* **Missing**: No explicit coordination with Boston’s Go Boston 2030 or MBTA service planning
* **Opportunity**: Establish formal partnerships for cross-border route connectivity

#### 3. **Implementation Methodology Gaps**

* ✅ **Progress Made**: Washington Street redesign shows major infrastructure planning capability
* **Remaining Gap**: No quick-build or pilot project framework like Boston and Somerville
* **Opportunity**: Develop rapid deployment protocols for safety improvements between major projects

#### 4. **Performance Measurement Gaps**

* ✅ **Progress Made**: 2040 net-zero target established through ZEAB
* **Remaining Gap**: No VMT or mode share tracking like Boston’s 50% car trip reduction goal
* **Opportunity**: Establish baseline measurements and annual reporting in 2025 CARP

#### 5. **Climate Integration Gaps**

* ✅ **Progress Made**: Strong connection between transportation and climate targets through ZEAB
* ✅ **Progress Made**: 2025 CARP will quantify transportation’s role in emissions reduction
* **Remaining Gap**: Need specific transportation mode shift targets within climate framework

### B. UNIQUE BROOKLINE OPPORTUNITIES

#### 1. **MBTA Green Line Advantages**

* **Unique asset**: Direct subway connectivity throughout town
* **Opportunity**: Leverage existing rail transit for first/last mile solutions
* **Missing**: No integration of Green Line service improvements with local transportation planning

#### 2. **Density and Walkability Foundation**

* **Existing strength**: Higher density than suburban peers
* **Opportunity**: Build on walkable neighborhoods for 15-minute city approach
* **Missing**: No mixed-use zoning integration with transportation planning

#### 3. **Educational Institution Partnerships**

* **Unique asset**: Multiple schools and educational institutions
* **Opportunity**: Safe routes to schools as unifying community priority
* **Missing**: No coordination with institutional transportation demand management

#### 4. **Regional Transit Hub Potential**

* **Geographic advantage**: Central location between Boston, Cambridge, Newton
* **Opportunity**: Develop as regional micromobility and EV charging hub
* **Missing**: No strategic vision for regional connectivity role

### C. RECOMMENDED REGIONAL COLLABORATION OPPORTUNITIES

#### 1. **Immediate Partnerships**

* **Blue Bikes expansion**: Coordinate with Boston/Cambridge for regional bike-share
* **MBTA advocacy**: Joint lobbying for Green Line service improvements
* **Charging network**: Regional coordination for EV charging station placement

#### 2. **Medium-term Collaborations**

* **Regional bike network**: Connect protected bike lanes across municipal boundaries
* **Transit priority**: Coordinate bus lane and signal priority projects
* **Data sharing**: Joint mode share and VMT monitoring across municipalities

#### 3. **Long-term Regional Vision**

* **Mobility hubs**: Coordinate multimodal transfer points at municipal borders
* **Integrated payment**: Participate in regional mobility-as-a-service platform
* **Climate planning**: Joint regional transportation decarbonization strategy

## 8. BEST PRACTICE EXAMPLES

### National and International Leaders:

* **Seattle:** Comprehensive multimodal integration and Vision Zero implementation
* **Minneapolis:** Winter cycling infrastructure and protected bike lane networks
* **San Francisco:** Quick-build safety projects and dynamic pricing pilots
* **Paris:** 15-minute city implementation and car-free zones
* **Copenhagen:** Integrated cycling infrastructure and traffic signal priority
* **Amsterdam:** Protected intersection designs and bike parking integration

## 9. CONCLUSION AND NEXT STEPS

### Critical Actions for Comprehensive Mode Shift:

1. **Immediate** (0-6 months):
   * Align with state climate targets and policies
   * Establish baseline metrics and data collection (learn from Boston’s VMT tracking)
   * Apply for available grant funding
   * Create equity assessment framework
   * **NEW**: Initiate regional coordination meetings with Boston, Cambridge, Newton
2. **Short-term** (6-18 months):
   * Develop comprehensive mode shift plan with specific mode share targets
   * Launch pilot projects for quick wins (adopt Somerville’s quick-build methodology)
   * Establish regional partnerships for Blue Bikes expansion and charging coordination
   * Create public engagement structure
   * **NEW**: Develop Transportation Safety Ordinance with measurable targets
3. **Medium-term** (18-36 months):
   * Implement Complete Streets redesigns with protected bike infrastructure
   * Launch TOD initiatives leveraging Green Line connectivity
   * Deploy technology solutions and integrated payment systems
   * Scale successful pilots
   * **NEW**: Establish regional mobility hubs and cross-border route connections

### Key Success Factors Enhanced by Regional Analysis:

* **Political leadership and commitment** with ordinance-based accountability (Cambridge model)
* **Dedicated funding streams** leveraging regional partnerships and state programs
* **Community engagement and buy-in** using school safety as unifying priority (regional approach)
* **Regional coordination** as central strategy rather than afterthought
* **Performance measurement and adaptation** with shared regional metrics
* **Equity-centered implementation** coordinated across municipal boundaries

### Regional Competitive Advantages for Brookline:

* **Green Line connectivity**: Unique subway access throughout community
* **Strategic location**: Central hub between major employment centers
* **Density foundation**: Higher density than suburban peers enables efficient transit
* **Educational institutions**: Multiple schools create safe routes priority

### Critical Findings from Regional Comparison:

The regional analysis reveals that Brookline is **significantly behind** neighboring communities in transportation mode shift planning. While Boston targets 50% car trip reduction by 2030, Cambridge has mandated 25 miles of protected bike lanes, and Newton has institutional frameworks for implementation, Brookline’s current vision lacks:

1. **Quantified mode shift targets** (all neighbors have specific goals)
2. **Legislative framework** for accountability (Cambridge ordinance model)
3. **Regional coordination strategy** (Boston’s comprehensive planning)
4. **Rapid implementation methodology** (Somerville’s quick-build approach)
5. **Institutional structure** (Newton’s taskforce model)

The current vision provides a solid foundation for vehicle electrification but requires **urgent expansion** to achieve transformative mode shift aligned with regional leadership, state climate goals, and transportation best practices. Without regional coordination and ambitious mode shift targets, Brookline risks becoming a transportation island in an increasingly connected sustainable transportation network.