Watertown’s Comprehensive Plan, adopted in 2015, identifies Coolidge Square as a primary retail center, serving the Town and region and known for its ethnic and specialty food stores and restaurants. The plan suggests this is an area that lends itself to outdoor seating and may support a more mixed-use future.

**Comprehensive Plan Vision:** The Watertown community envisions a future that...incorporates welcoming, attractive streetscapes and gateways on well-designed, pedestrian-oriented, bicycle-friendly, tree-lined streets.

**Future Land Use and Goals:** The plan suggests improving upon the aesthetics and preservation of neighborhood character. The goals suggest supporting economic vitality and diversity with improvement to the street life and sidewalk culture.

**Economic Benefits from Road Diets**
Coolidge Square is a significant retail district and could be enhanced by a road diet. Road diets can have a positive impact on local business activity. For example, in Arlington, since the road diet, 6 restaurants added sidewalk seating.

- **Slower speeds** improve safety which attract pedestrians, shoppers, and diners
- Creates more of a **destination** and removes the perception of a through-way
- **Aesthetics** can be improved by widening pedestrian zone with amenities to support businesses, residents, and visitors
- Supports **revitalization** and continued investment

**Enhancement ideas to support businesses**
- Wider sidewalks for pedestrians and sidewalk dining
- Narrowed street crossings for easier and safer walking and shopping
- Landscaping to provide shade, visual beauty, and improve air quality
- Benches, tables, and parklets for shoppers and bus riders
- Bus shelters for transit riders
- Bike lanes for safety and to reduce congestion
- Bike parking in designated areas
- Employee parking in designated areas
- Designated loading areas
A Road Safety Audit was conducted in the Coolidge Square neighborhood on December 5, 2017. A Road Safety Audit is a formal safety examination of an existing or future road or intersection by an independent, multidisciplinary team, in order to identify potential safety issues and possible opportunities for safety improvements with regard to all roadway users.

**Participating Agencies**
- Watertown Community Development and Planning
- Watertown Police Dept.
- Watertown Fire Dept.
- MassDOT
- MBTA
- WalkBoston
- WorldTech Engineering

**Crash Summary**
- 84 Total Crashes
- 25 Injuries
- 10 Involving Pedestrians
- 6 Involving Bicyclists
- 10 Involving Parked Vehicles

**Recommendations for Further Study**
- Consider Making Kimball Road One-Way / Close Off
- Relocate Bus Stop(s)
- Consider Road Diet
- Relocate Parking from Intersections / Crosswalks
- Potential Curb Extensions / Bumpouts
- Wayfinding for Parking Lot
- "T" Up Intersection
- Consider Bus Priority Lane
- Pedestrian Signal
- Bike Lanes / Sharrows
- Bus Prioritization / Emergency Vehicle Preemption
- Gateway Treatment
- Relocate Parking from Intersections / Crosswalks
- Bike Detection / Bike Boxes
- Consider Signal / Roundabout
- Gateway Treatment

**Symbols and Types of Crash**
- Moving Vehicle
- Backing Vehicle
- Pedestrian
- Bicycle
- Parked Vehicle
- Fixed Object

- Rear End
- Head-On
- Turning Movement
- Angle
- Sideswipe
- Out-of-Control

- No Injury
- At least One Injury

**Road Safety Audit**
Recommendations For Further Study
Coolidge Square Open House, January 2018
Traffic Data - Level of Service

Coolidge Square Open House, January 2018

**Average Daily Traffic (ADT)**

Average daily traffic is counted by Automatic Traffic Recorders (ATR).

**Peak Hour Volumes by Mode**

- 33% Vehicles
- 66% Average Daily Traffic
- 1% Bus Ridership

**Average Daily Traffic**

- **East of Dexter Avenue**
  - May 2007: 18,900
  - Jun 2012: 17,000
  - May 2017: 16,900

- **East of Arlington Street**
  - May 2007: 17,200
  - May 2014: 15,500
  - May 2017: 14,900

**2017 AM Peak Hour Volumes (7:45am-8:45am)**

<table>
<thead>
<tr>
<th>Level of Service</th>
<th>Average Stopped Delay per Vehicle (seconds)</th>
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<tbody>
<tr>
<td></td>
<td>Signalized Intersection</td>
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<tr>
<td>A</td>
<td>0 - 10</td>
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**2017 PM Peak Hour Volumes (5:00pm-6:00pm)**

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<tr>
<th>Level of Service</th>
<th>Average Stopped Delay per Vehicle (seconds)</th>
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<tbody>
<tr>
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</tbody>
</table>

Traffic Volumes are from November 2017 Mt. Auburn Street at Arlington Street Turning Movement Counts (TMCs). Network counts were balanced from 2014 TMCs.
What is a Complete Street?

- “Transportation infrastructure that provides access for all, a real choice of modes, and safety in equal measure for each mode of travel.” (MassDOT PD&DG)

Benefits of Complete Streets

- More efficient use of space
- Reduced lane widths decrease travel speed along a corridor
- Shorter pedestrian crossing distances
- Ability to accommodate bicycles
- Improved transit stops and more efficient bus travel
- Enhanced traffic operations
- Maintains/increases capacity with fewer conflict points and crashes
- Creates space for landscaping amenities/street furniture
- Improved safety and aesthetics attract pedestrians, shoppers, and diners
- Creates a destination, rather than a through-way

Increased Efficiency for Vehicles

- Reduction in lane changes creates safer and more efficient travel for vehicles

Emergency Response

- Emergency responders are able to utilize space that is not designated for vehicles, decreasing traffic impacts during emergencies
- Motorists will have the flexibility to pull out of the flow of traffic to allow the safe passage of emergency responders

Complete Streets Pilot Program

- Short term pilot program to evaluate proposed Complete Streets concepts along a portion of Mt. Auburn Street
- Program would involve the use of temporary markings/signage

Maintaining Curb to Curb Width

A change in the number and width of lanes, can provide space for all users; drivers, pedestrians, transit riders, and bicyclists within existing roadway footprint

Before

After

Complete Streets Concept

Coolidge Square Open House, January 2018
Analysis separated into four segments

• (1) Patten Street to Walnut Street
• (2) Walnut Street to Dexter Avenue
• (3) **Dexter Avenue to Arlington Street** *
• (4) Arlington Street to Cambridge city line

*Segment 3 represents Coolidge Square. Please find information specific to Coolidge Square at the various discussion tables*
**Current Concepts (from November 2017 Meeting)**

**(1) Patten Street to Walnut Street**
- Proposed cross section remains consistent with original layout
- Traffic volumes and intersection spacing preclude road diet concept
- Must maintain two travel lanes on each approach
- Bicycle lanes are not feasible if existing curb line is to be maintained
  - Share the road treatment (sharrows)
- Future completion of Community Path and DCR Greenway will link Watertown Sq. with Cambridge

**Please find information specific to Coolidge Square at the various discussion tables**

**Mt. Auburn Street Corridor**

Coolidge Square Open House, January 2018
Pedestrian Signals
- Clear explanation for proper pedestrian use
- Accessible Pedestrian Signals (APS) to assist visually impaired individuals
- Exclusive pedestrian phase stops all vehicles to provide safer crossing
- Flashing signs / beacons

Curb Extensions
- Reduces pedestrian crossing distance
- Limits parking to an appropriate distance from crosswalk
- Improves visibility of pedestrians
- Reduces curb radii to slow vehicle turning speeds
- ADA compliant wheelchair ramps
- Improves alignment of wheelchair ramps within crosswalk

Streetscapes
- Street trees create separation for pedestrians and a sense of enclosure for drivers
- Rain gardens allows for infiltration of sidewalk runoff, recharging groundwater
- Parklets extend from the sidewalk into unutilized paved areas to create additional features for pedestrians

Intersection of Nichols Ave. and Bigelow Ave. – Watertown, MA

Crosswalk Treatments
- Ladder style provides high visibility to motorists
- Resin markings increases visibility at night
- Textured crossings can be used as part of a gateway treatment for traffic calming

Pedestrian Accommodations
Coolidge Square Open House, January 2018
Locations will be reviewed carefully to consider

- Sightline Issues
- Incoming Roads
- Bus Stop Loading

Rule of Thumb – No Mid-Block Crossings

**Desire Lines indicate locations where more than 5 pedestrians cross roadway without a marked crosswalk during peak hour.**

**Pedestrian Crash**

Crosswalk Locations

Coolidge Square Open House, January 2018
**Bicycle Accommodations**

Coolidge Square Open House, January 2018

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**Shared Lane**
- Bicyclists positioned in travel lane
- Used in extremely constrained situations

**Traditional Bike Lane**
- Used in constrained areas with no parking

**Buffered Bike Lane**
- Used in constrained areas adjacent to parking
- Painted buffer between bicyclists and parking lane to reduce dooring incidents

**Double Buffered Bike Lane**
- Horizontal separation for bicyclists from travel lane
- Painted buffer between bicyclists and parking lane to reduce dooring incidents

**Buffered Bike Lane**
- Used in constrained areas adjacent to parking
- Painted buffer between bicyclists and parking lane to reduce dooring incidents

**Bike Boxes**
- Provides queueing area for cyclists
- Allows cyclists to navigate turns ahead of vehicles
- Keeps cyclists in the drivers field of vision

**Separated Bike Lane**
- Bicyclists ride on the outside of the parking lane
- Horizontal and/or vertical buffer between bicyclists and parking lane
- Horizontal and/or vertical buffer between bicyclists and pedestrians

**Bicycle Parking Amenities**
- Bike racks provide an easily accessible short term parking solution
- Long term parking facilities offer increased security and protection from the elements

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**Wayfinding for Cyclists**
- Directs cyclists to destinations
- Increases safety and usage
Project Goal: Maintain existing legal parking spaces

Parking Inventory
Coolidge Square Open House, January 2018
Parking Management
- Available parking is closer than you think
- Good parking practice is to designate short-term parking closest to stores for customers, with employees occupying long-term spaces farther away

Shared Parking
- Most private parking spaces are only used part of the day
- Different uses peak at different times of the day
- Existing private parking is not always used efficiently (e.g. snow storage)

Wayfinding
- Makes efficient use of available parking
- Designate short- and long-term parking areas

Loading
- Keeping deliveries out of the traveled way
- Designated on-street/off-street loading areas
- Using on-street parking when parking demand is low

Angle Parking
- Increases available parking within existing street width

Representative Block
2 minute walk (approx. 400')
5 minute walk (approx. 1,000')
Coolidge Square Open House, January 2018

Bus Accommodations

Headway Statistics

Inbound
- Peak Hour (7:45am-8:45am)
  - 8 minutes
- Average
  - 12 minutes

Outbound
- Peak hour (5:00pm-6:00pm)
  - 9 minutes
- Average
  - 12 minutes

Stop Spacing
- Spacing balances trip time with walking distances
- Recommended spacing for key bus routes is 750’-1,300’
- 200’ of distance adds 1 minute of walking time
- Each stop adds an average of 15 seconds to each trip

Ridership
Goal: Improve service reliability
- Route 71 serves 5,300 passengers per weekday
- 84% of trips are for work or school

Mt Auburn @ Upland Rd.
- Boarding Passengers: 46 per day
- Deboarding Passengers: 71 per day

Mt Auburn @ Kimball Rd.
- Boarding Passengers: 63 per day
- Deboarding Passengers: 234 per day

Mt Auburn @ Keenan St.
- Boarding Passengers: 34 per day
- Deboarding Passengers: 232 per day

Mt Auburn @ Adam St.
- Boarding Passengers: 110 per day
- Deboarding Passengers: 45 per day

Mt Auburn @ Bigelow Ave.
- Boarding Passengers: 227 per day
- Deboarding Passengers: 101 per day

Mt Auburn opp. Keenan St.
- Boarding Passengers: 210 per day
- Deboarding Passengers: 39 per day

Imagery © Google
### Bus Stop Location Types

- **Near-Side**
  - Minimum length 90’
  - Encourages crossing after the bus is stopped

- **Far-Side**
  - Minimum length 70’
  - Encourages crossing behind the bus

### Passenger Loading Zones
- Areas must be clear of obstructions
- Accessible path (min. 4’ wide) to zones
- Front Landing Pad (min. 5’ wide by 8’ deep)
- Rear Clear Zone (min. 10’ wide by 4’ deep)
- May overlap sidewalk

### Barr Foundation

*“Driving down transportation-related emissions with smarter travel and smarter places.”*

**BOSTON BRT**
- Boston BRT (Bus Rapid Transit) Grant
- Mount Auburn Street Pilot Program

### Shared Bus Bike Lane
- Buses and bicyclists share a travel lane
- Allowed in constrained areas without sufficient space for separate facilities

### Queue Jump Lanes
- Short bus lanes approaching a traffic signal
- Buses bypass queued cars at signal
- Buses merge with traffic after signal

### Transit Signal Priority
- Buses approaching signals can extend green time
- Specialized signals allow busses in a queue jump lane to merge into a traditional lane ahead of queue

### Bus Tapers
- Deceleration taper
  - Minimum: 5’ of length to 1’ of depth
  - May be excluded on far-side stops
- Acceleration taper
  - Minimum: 3’ of length to 1’ of depth
  - May be excluded on near-side stops

### Stop Amenities
- Bus arrival time boards
- Weather shelters
- Benches
- Short term bike parking

### Floating Bus Stop
- A separated bike lane passes behind the landing pad and loading zones
- Bus riders must cross bike lane

### Curbside Bus Stop
- In areas with no parking, buses remain in travel lane or encroach into bike lane, if provided
- In areas with parking, buses stop in place of the parking lane

### Constrained Bus Stop
- Raised or separated bike lanes are part of clear zones
- Cyclists must stop while buses are loading and unloading

### Bus Bay
- Buses are removed from the travel lane
- Curb line is offset from road to provide area for bus

*www.barrfoundation.org*