Bike Boulevard for South Main St.

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The Issue:

Is South Main Street in Haydenville a suitable candidate for "bicycle boulevard" treatment?

What Is A Bicycle Boulevard?

A "bike boulevard" (sometimes called a "neighborhood greenway") is a street with low traffic volume and low vehicle speeds in which bicycles share the roadway with motor vehicles. Typically, traffic calming measures such as speed humps are employed to reduce vehicle speeds and to discourage use by non-local traffic. Appropriate signs and "sharrow" (share-the-road arrow) markings on the pavement remind motorists to share the road with cyclists, and the low speed difference between bikes and cars contributes to making the road safe for cyclists.

Note that a bicycle boulevard is not simply a street that has sharrow markings painted on the roadway; it is a street with low enough traffic volume and speed that it is actually *capable* of safely accommodating both bicycles and motor vehicles.

A bike boulevard is like a street with training wheels: it's a place where even the least-skilled cyclists are comfortable riding (see here) and is a place where young cyclists can safely practice riding on a street — a skill they *will have to learn* in order to be able to ride safely to bike paths or ride anywhere that bike paths don't go.

Bike boulevards are widely used in Portland OR, Seattle WA, and many other cities in the U.S. Extensive networks of bicycles sharing traffic-calmed roads with cars are found in the Netherlands and elsewhere in Europe. (More information here: Bicycle Boulevards.)

Traffic Volume on South Main

In 2023 the town's engineering company, VHB, claimed, without evidence, that South Main St. has "about 2000" vehicles per day on it.

Back in 2015, Fuss & O'Neill, a transportation and civil engineering company the town had previously hired, *measured* traffic levels on South Main St. and found average weekday traffic volume north of Fort Hill Rd. to be 809 vehicles per day (in both directions combined).

MassDOT's Traffic Count Data System has figures for Bridge St. in front of the American Legion, a street which, until the closing of the Bridge St. bridge in July of 2023, carried nearly all of the traffic between South Main St. and Route 9. The system shows traffic volume of 699 vehicles per day in 2015, and 696 vehicles per day in 2022. Thus, MassDOT does not believe that traffic volume has increased since 2015.

Fuss & O'Neill reported peak traffic volume occurring between 4 and 5 PM, with 80 vehicles per hour in both directions combined. Two residents, Shattuck and Weigang, counted cars for a week between 4 and 5 PM and found a daily average of 72.4 vehicles (both directions combined), about 10% less than what Fuss & O'Neill measured in 2015. Traffic volume in the peak direction during 4-5 PM averaged 37.4 vehicles per hour – which is slightly less than **one vehicle** every minute and a half.

Thus, we believe that Fuss & O'Neill's measurements are still a valid estimate of traffic volume on South Main St. More information can be found here: Traffic Volume on South Main St.

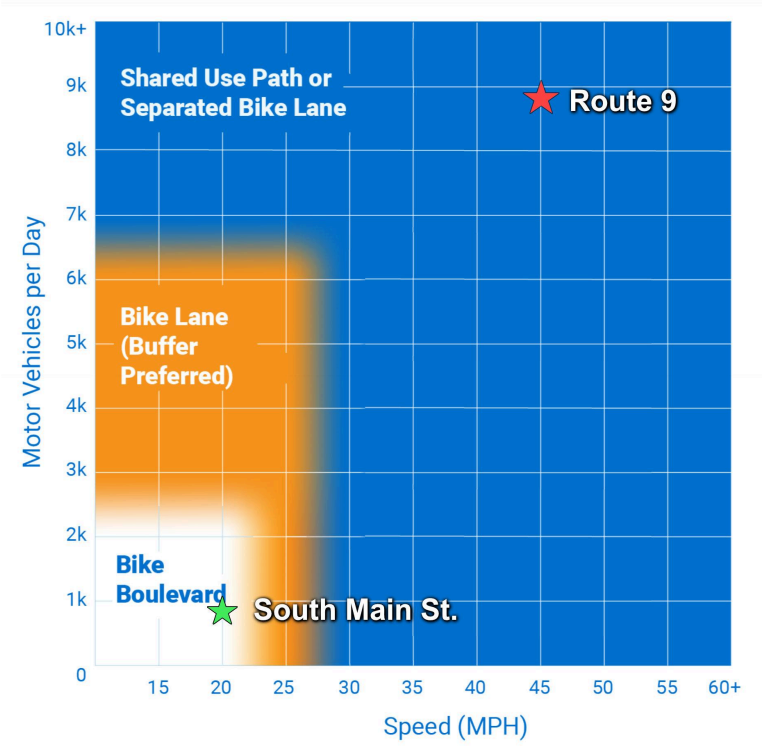
Traffic Speed

Both the Greenway committee and the neighborhood wish to see the current 25 mph speed limit reduced to 20 mph, and both want speed humps installed on the road to enforce this limit.

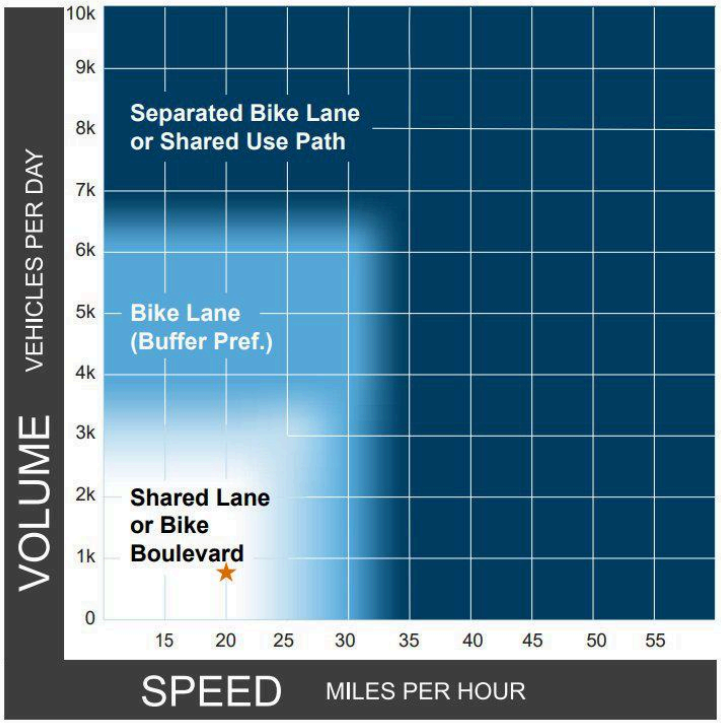
How Bicycle Accommodations Are Chosen

The Massachusetts Department of Transportation, the Federal Highway Administration, and the National Association of City Transportation Officials all provide charts or tables for selecting appropriate bicycle accommodations for streets. In every case, the selection is based on **traffic volume** and **vehicle speeds**. And in every case, the recommended accommodation for a street with 809 vehicles per day and a 20 mph speed limit is a **bicycle boulevard**. Shared-use paths are recommended for streets with more than 6,000 vehicles per day, speeds in excess of 25-30 mph, and low pedestrian volumes.

The chart below is from MassDOT's *Municipal Resource Guide for Bikeability*. The green star indicates South Main Street's traffic volume and proposed speed limit. The red star indicates Route 9's traffic volume and speed limit between Haydenville and Williamsburg, and shows why a shared-use path is necessary on Route 9.



The next chart is from the Federal Highway Administration's *Bikeway Selection Guide*. The orange star indicates South Main Street's traffic volume and speed. Again, a bike boulevard is the recommended accommodation for the street.



And finally, the following table is an excerpt from the National Association of City Transportation Officials' *Urban Bikeway Design Guide*, Choosing an All Ages & Abilities Bicycle Facility.

Contextual Guidance for Selecting All Ages & Abilities Bikeways

Roadway Context			All Ages & Abilities Bicycle Facility
Target Motor Vehicle Speed*	Target Motor Vehicle Volume (ADT)	Key Operational Considerations	
≤ 20 mph	≤ 1,000 – 2,000	< 50 motor vehicles per hour in the peak direction at peak hour	**Bicycle Boulevard**
≤ 25 mph	≤ 500 – 1,500		

Again, with South Main Street's 20 mph speed limit, 800 vehicles per day, and 40 vehicles per hour in the peak direction at peak hour, a bike boulevard is the recommended accommodation – and is specifically identified as being appropriate for bicyclists of all ages and abilities.

Arterial Roads

Roads are classified by MassDOT and the Federal Highway Administration as either Local, Collector (Minor and Major), Arterial (Minor and Principal), Freeway/Expressway or Interstate, in order of increasing busyness. Street classification is not a rigorously objective process. In practice, it often seems to be based on the total length of a route the street is a part of. A street's classification may or may not be indicative of the level of traffic activity on the street.

South Main St. south of Bridge St. is classified by MassDOT as an "Urban Minor Arterial" roadway. (With an F_Class of 5, it would actually be classified as a "Rural Major Collector" except for central Haydenville being classified as part of a "Large Urbanized Area" that includes Amherst, Northampton and Easthampton. More info here.) The street earned its F_Class of 5 because it's part of a 13 mile long route (Route_ID N4826 EB) that extends from Chesterfield Road at the Westhampton town line, through Leeds, Haydenville and Whately up to River Rd. by the Connecticut River.

In people's minds, though, an "arterial roadway" means things like this (from here, here and here):

- A high capacity road that carries longer-distance flows between important centers of activity.
- The backbone of a traffic network.
- Designed for unimpeded high-speed movement.
- Traffic signals are used at most major intersections.
- Can include four lanes or more.
- Speed limits typically range from 45 to 55 mph
- May be divided at the center or a center turn lane.

- Arterials provide direct, relatively high speed service for longer trips and large traffic volumes. Mobility is emphasized, and access is limited.
- Arterials provide the highest level of mobility at the greatest vehicular speed for the longest uninterrupted distances and are not intended to provide access to specific locations.
- Urban minor arterial streets provide intra-community travel, do not penetrate neighborhoods, and are generally spaced no more than 1 mile apart in fully developed areas.

These **do not describe** South Main St. in Haydenville at all, which carries, at its peak traffic hour, just **one vehicle** in each direction every minute and a half at a speed limit of 25 mph. When people think about "making an arterial road into a bicycle boulevard," what comes to mind does not match the reality of our street. We believe the common discrepancy between roadway classification and actual traffic conditions is why bicycle facility recommendations are always based on **traffic volume and speed**, rather than roadway classification.

Beginning in April 2024, VHB began claiming that MassDOT regulations prohibit putting bike boulevards on roads classified as arterial. They cited Engineering Directive E-20-001 as the basis for this claim.

On April 22, they wrote, "Based on the roadway classification and the directive noted above, if this was a MassDOT project, the boulevard condition may be applicable to the upper section [of South Main, above Bridge St.] but not the lower."

On April 24, they wrote, "Based on MassDOT design directives, Bike Boulevards (or sharrows) are not an appropriate treatment for arterial roadways." In response to a question "Does VHB have the capacity to design the Boulevard scenario?" they wrote, "We do have the capacity, although because it does not meet MassDOT standards, VHB might be looking for the Town to waive VHB's liability for putting bikes in the road on an arterial."

On May 1, they wrote, "VHB has the ability to advance either design selected by the town, however, VHB might be looking for the Town to waive VHB's liability for placing bicycles in the roadway on an arterial roadway."

And then, on June 6, they wrote, "A bike boulevard will not be designed by VHB for reasons previously stated to the town."

The problem with these statements is that Engineering Directive E-20-001 does not even contain the word 'arterial,' nor 'collector.' It places *no restrictions* on bicycle accommodations based on roadway classification. Instead, it gives a list of five conditions that trigger a restriction on the types of bike accommodations allowed. **South Main St. meets none of these conditions.** Engineering Directive E-20-001 does not apply to South Main St., nor to any "arterial" road that does not meet at least one of the five conditions.

What the Directive does say is that bicycle accommodations **shall be designed** in accordance with four transportation engineering manuals. Except for one manual which is devoted to

separated bike lanes, all of these manuals describe bicycle boulevards as a valid accommodation on appropriate streets, even if the street is classified as arterial.

A full response to VHB's claims can be found here: Bike Boulevards and Arterial Roads

Why This Matters: Neighborhood Concerns

The Williamsburg Mill River Greenway committee proposes replacing the sidewalk on South Main Street with an 8-foot wide shared-use bike path. (There is a sidewalk only on the east side of the street.) The neighborhood's concerns with this plan include:

Driveway Safety

- Because of the Mill River running behind houses, the neighborhood on the east side is built up close to the street. No expansive front yards on this side of the street; there are fences and plantings right up to the sidewalk. We value this, it creates what we think of as a "village feel" to our neighborhood.
- The proposed shared-use bike path crosses point-blank in front of 11 driveways along 700 feet of roadway. This is a lot of driveways for such a short length of road.
- Due to the lack of open front yards, there are sight-line obstructions for drivers pulling out of driveways. Drivers can't see very far up and down the sidewalk, and cyclists can't see cars backing out of driveways.
- This is not a problem for pedestrians on the sidewalk, because pedestrians can stop almost instantly. Not so for bicycles, which move much faster and require a significant distance to come to a stop.
- Bicycles will be approaching driveways from both directions on the path, causing more of a delay between a driver looking each way and moving into the path of oncoming bicycles – *if* the driver even remembers to look both ways.
- Bicyclists riding in the street have the right of way over cars backing out of driveways and don't even slow down as they pass by. Bicyclists on the proposed bike path are likely to think they have the same right of way and not slow down for driveways – particularly if they can't see cars up ahead pulling out.
- Eventually, a bicyclist is going to run into a car backing up, or a car will strike a cyclist on the path.
- This is not a problem for bicycles riding in the road, because by the time a car's bumper is at the edge of the roadway, sight lines are clear over the grass buffer between the sidewalk and the road. Also, bikes in the road approach from only one direction and are spotted when a driver looks for oncoming vehicles on the road.
- Our Safety Concerns letter from Nov. 2023 contains more information, and a later document, Guidelines for Shared Use Paths, quotes manuals from MassDOT, the

Federal Highway Administration, and the American Association of State Highway and Transportation Officials, which warn about the same problems identified above.

Pedestrian Safety

- If the proposed bike path is built, residents using what was once our sidewalk will have to constantly stay alert for bicycles coming up behind them. We will lose a facility we have long enjoyed where people young and old can be at ease while walking or playing.
- If a pedestrian isn't paying attention, is hearing-impaired or wearing earbuds, if a cyclist doesn't call out a warning, or if a pedestrian doesn't move as a cyclist expects, they may get struck by the cyclist, resulting in injuries to both pedestrian and cyclist. If a cyclist has to swerve at the last second to avoid striking a pedestrian, injuries to the cyclist are likely.
- The proposed bike path runs directly in front of at least four front-yard fences, without the minimum three-foot spacing called for in Section 11.4.1.2 of the MassDOT's Project Development and Design Guide. This lack of buffer space limits cyclists' ability to make emergency evasive maneuvers to avoid pedestrians.
- Residents regularly walk dogs on the sidewalk. Dogs and bicycles are a bad mix, both from sudden aggressive reactions by dogs, and from dogs and leashes getting in the way of cyclists.
- Most of the residents in the neighborhood are over 60 years of age. Older people don't move as quickly, don't hear as well, and are more at risk in the event of a collision. Also, the older people in our neighborhood value direct contact with their neighbors, and the sidewalk is their means for making that connection. If the sidewalk becomes a more dangerous place for senior citizens to walk, they are likely to wind up being more isolated by the change.

Looking Forward

- When the Route 9 bike path to Williamsburg opens (*if* it opens), South Main will be a through way to destinations marked on bike route maps. Bicycle traffic levels may well increase significantly.
- With shared-use paths on either end of the South Main connector, bicyclists are *quite likely* to ride on a shared-use path through our neighborhood if one is available.
- Funneling larger amounts of bike traffic onto an 8-foot shared use path will make walking increasingly perilous for residents, and backing out of driveways more dangerous.
- If bicycles are instead guided onto a bike boulevard on South Main St., large numbers of bicycles can be handled without problem for pedestrians or vehicles backing out of driveways.

- E-bikes are a big part of the future: they are the way that large numbers of people will eventually get around without using cars
- E-bikes are currently not allowed on sidewalks, but they are not prohibited on bike paths: i.e., on the proposed path in front of our homes.
- E-bikes are heavier and tend to be ridden faster than conventional bikes. Required sight lines are longer, stopping distances are longer, and they are capable of inflicting much more damage in the event of a collision.
- All of our safety concerns are magnified for e-bikes.

Substandard

At 8 feet wide, the proposed path is narrower than the standard 10 foot minimum width for shared-use paths. See Guidelines for Shared Use Paths for more on how the proposed path fails to live up to MassDOT guidelines for shared-use paths.

The Greenway committee has adopted a motto, “A Common Path for the Whole Community,” with an illustration showing pedestrians, children, a person in a wheelchair, a baby carriage, a dog walker and bicyclists all on the proposed 8-foot bike path.

“A Common Path for the Whole Community.”

This may be an admirable social goal, but we regard it as astonishingly poor bicycle transportation engineering. Everywhere else we look, a high priority is given to separating pedestrian traffic from bicyclists, for sound safety reasons. Paths that combine bicycle and pedestrian traffic are regarded as a last resort, used only when no other accommodation is possible. For South Main Street, not only is another accommodation possible, it is what is *recommended* for the street by numerous bicycle facility manuals.

“Build Both”

In May 2024, a compromise was proposed: build both an 8 foot sidewalk/shared-use path, paved in concrete, and a bicycle boulevard on the street. The rationale was to encourage as many cyclists as possible to ride on the street and to provide a wider sidewalk for the few cyclists who won’t ride in the street. The compromise is described here: Build Both.

In attempting to settle on a mutually-agreeable proposal, the neighborhood gave up its request for a wider 14 foot lane on the east side (changed to 12 feet), agreed to a 5 foot grass buffer (rather than 3 feet), agreed to a curb on the east side, and gave up on trying to find a means of preserving parking for 29 South Main (whose driveway is going to be overlaid by the bike path).

Then, on June 6, VHB engineering declared that it simply would not design a bike boulevard for South Main Street. Without a bike boulevard treatment for the street, what the town was offering became nothing more than the Greenway's original plan with only the surface of the shared-use path being changed from asphalt to concrete.

The town said that it *might* be able to paint sharrows on the road and install bike boulevard signs after construction was complete, but they also stated that they might not if regulations or liability concerns prevented it. Given that the town's sole professional engineering authority had declared that a bike boulevard isn't allowed on South Main Street, we regarded this "maybe" offer as unlikely to be fulfilled. In a neighborhood meeting on June 10, residents emphatically rejected the stripped-down proposal.

At the select board meeting on June 13, the neighborhood asked for 90 days to hire a bicycle transportation engineer to provide a second opinion of VHB's declaration that South Main St. is ineligible for bike boulevard treatment and an independent assessment of the safety of alternative proposals. The select board refused, and voted 2 to 1 to send the unmodified Greenway design, which the neighborhood had been objecting to for more than a year, to MassDOT for approval and contracting.

Sharrows and Signage

The obstacle to a potential agreement between the town and the neighborhood is VHB's declaration that regulations prohibit a bicycle boulevard from being constructed on South Main Street – a judgment which then spills over into the town likely being unwilling (upon consultation with counsel) to independently provide bike boulevard elements that VHB itself is unwilling to provide. Two elements of a bike boulevard are already in the Greenway design: a 20 mph speed limit and speed humps to enforce that limit. The two remaining elements, which VHB refuses to implement, are sharrow markings on the pavement and signs appropriate for a bike boulevard. We believe VHB's refusal is not justified by regulations. In addition to the reasons given in "Arterial Roads" above, we point to the example of West Farms Road in Northampton.

West Farms Road is similar to but somewhat busier than South Main Street in Haydenville. Its speed limit is 30 mph vs. 20 mph proposed for South Main. (And it has no speed humps to enforce the speed limit.) Its traffic volume has not been measured, but three miles to the south, its continuation road carries about 1,000 vehicles per day – versus 800 for South Main. Like South Main, West Farms is classified as an "Urban Minor Arterial" road. And despite this, it has both sharrows painted on the roadway and "Bikes May Use Full Lane" signs. (See Street View. Per Northampton Construction Alerts, the signs & sharrows were installed in October of 2022.)

If signs and sharrows are allowed on a busier road in Northampton, why is VHB insisting that they aren't permitted in Haydenville?

For more information about the South Main Street neighborhood's concerns and our proposal for bicycle accommodation on the street, please visit our website at southmain01039.com

Roads with Sharrows in Northampton

Street	Classification	Traffic Volume	Speed	Sharrows?	Signs?	Date Installed
West Farms Rd.	Urban Minor Arterial	~1,049 vpd	30 mph	Yes	Yes	2022
Pine St.	Urban Local	3,886 vpd	30 mph	Yes	No	2022
Meadow St.	Urban Collector	1,331 vpd	35 mph	Yes	Yes	2022
Pleasant St.	Urban Principal Arterial	19,824 vpd	25 mph	Yes	No	2018

Proposed for Haydenville

South Main St.	Urban Minor Arterial	809 vpd	20 mph	Yes	Yes	2025

Road Classification from:
https://geo-massdot.opendata.arcgis.com/datasets/functional-classification/explore?location=42.328912%2C-72.662135%2C14.61

Traffic Volume from: https://mhd.public.ms2soft.com/tcds/tsearch.asp?loc=Mhd&mod=

West Farms Rd.
Aug 2023 View Sept 2022 Street View
Signs & sharrows: https://northamptonma.gov/CivicAlerts.aspx?AID=1296&ARC=2666

Pine St.
Sept 2022 Street View Oct 2018 Street View
Paving: https://ma-northampton.civicplus.com/CivicAlerts.aspx?AID=1096&ARC=2317
Fuss & O'Neill: https://northamptonma.gov/AgendaCenter/ViewFile/Minutes/_02162021-5433
Resident Notification: https://northamptonma.gov/DocumentCenter/View/16555/letter-distributed
Signs & Sharrows: https://northamptonma.gov/AgendaCenter/ViewFile/Minutes/_05172022-6468

Meadow St.
Aug 2023 Street View Oct 2019 View
Paving:
https://www.facebook.com/NorthamptonMAPD/posts/the-meadow-street-improvement-project-has-commenced-traffic-patterns-will-vary-a/2034102276744979/
Signs & sharrows, and traffic volume (17,297 vehicles in 13 days):
https://northamptonma.gov/DocumentCenter/View/24205/MEADOW-ST-RESPONSE-FORM
https://northamptonma.gov/AgendaCenter/ViewFile/Minutes/_05172022-6468

Pleasant St.
Aug 2023 Street View Oct 2018 View