



LEBANON PEDESTRIAN & BICYCLIST ADVISORY COMMITTEE

MAY 4, 2021 - 7:00 PM
REMOTE VIA MICROSOFT TEAMS
LEBANONNH.GOV/LIVE

1. Call to Order

- A. Review of meeting procedures and NH RSA 91-A "Right-to-Know" requirements.

2. Approval of Minutes

- A. April 6, 2021

3. Open to the Public

4. Study Items

- A. Updates from Other Boards
 - Planning Office - Planning Staff
 - Safe Routes to School - Planning Staff
 - City Council - Erling Heistad
 - Planning Board/CIP Meeting - Gregorio Amaro
 - Police Reports - Alan Schnur
 - Mascoma River Greenway Coalition - Colin Smith
 - Class VI Roads - Colin Smith
 - State of NH Updates - Alex Belenz
 - Rails to Trails - VACANT
 - Communications Plan - Marie McCormick

- B. Ped & Bike Amendments to Development Regulations

- C. May is Bike Month/Helmets/Bike Rodeo/Tunnel Opening

5. Other Business

- A. City and NHDOT Projects (NHDOT 120/I-89 Exit 18 etc.)
- B. In-person meetings

6. Future Agenda Items

- A. Bike Friendly Community
- B. UV E-Bike Lending Library
- C. Multimodal Plan
- D. AARP Grant - West Lebanon Streetscape Pop-up Project

7. Adjournment

The order of agenda items is subject to change.

Lebanon Pedestrian & Bicyclist Advisory Committee Agenda
May 4, 2021

Due to the current situation with the COVID-19 Pandemic, the City of Lebanon is offering its meetings via Microsoft Teams. Members of the public are encouraged to attend by going to LebanonNH.gov/Live where you will find instructions on how to enter the meeting. Members of the public will be able to participate and ask questions through the Microsoft Teams software or by phone. Please visit LebanonNH.gov/Live for full details.

THE AGENDA, IN ITS ENTIRETY IS AVAILABLE ON THE CITY'S WEBSITE AT LEBANONNH.GOV

**Agenda
Pedestrian & Bicyclist Advisory Committee
May 4, 2021**

**Agenda Item #2A
Approval of Minutes**

APRIL 6, 2021

DRAFT

**PEDESTRIAN & BICYCLIST ADVISORY COMMITTEE
TUESDAY APRIL 6, 2021
REMOTE MEETING – MICROSOFT TEAMS
7:00 PM**

MEMBERS PRESENT: Colin Smith (Chair); Erling Heistad (City Council); Alan Schnur; Marie McCormick (Vice-Chair); John Kelleher; Clifton Below (Alt); Gregorio Amaro (Planning Board); George Sykes (City Council Alt)

MEMBERS ABSENT: Sarah Crysl Akhtar

STAFF PRESENT: Rebecca Owens (Associate Planner); James Donison (Director, Department of Public Works); Christina Hall (City Engineer); Brian Vincent (City Engineer)

1) CALL TO ORDER:

Chair Smith called the meeting to order at 7:01 PM.

A. Review of meeting procedures and NH RSA 91-A "Right-to-Know" requirements
Ms. Owens reviewed the executive order requiring public audio and video access and options for participation. A Roll Call of Board Members who participated remotely is listed above, in addition to staff present.

Two guests, Amy Chan (Ped-Bike member application pending) and Alex Belensz (Planner for Upper Valley Lake Sunapee Regional Planning Commission) joined.

2) APPROVAL OF MINUTES: March 2, 2021

Amendments: Ms. McCormick recommended a correction on page 1, to change "Mr." to "Ms." In reference to Ms. McCormick. Mr. Schnur noted clarifications on page 4 lines 20-21, to insert "just" before "after", insert "the" before "30mph", and delete the "s" in "signs". He also asked for "sidewalk" to be inserted in page 4, line 35 before "snow".

Ms. McCormick MOVED to approve the minutes as amended.

Seconded by Mr. Heistad.

Roll Call Vote: Members voting in favor included Mr. Kelleher, Mr. Schnur, Mr. Heisted, Ms. McCormick, Mr. Amaro, Mr. Below and Chair Smith.

****The vote on the MOTION was unanimously approved (7-0).***

Minutes approved with amendment.

3) OPEN TO THE PUBLIC:

4) STUDY ITEMS:

A. Updates from Other Boards

No updates were completed due to the meeting running out of time. Alternatively, based on a

request from the City Manager, after the agenda was published, for LPAC to review several upcoming Public Works projects, discussion shifted to consideration of three projects.

The first project reviewed is “Phase 2” of the installation of new sidewalks on the north side of Miracle Mile. Ms. Hall presented the project, noting that curb cuts were shortened where possible and that the busiest one at the Urgent Medical Care Center will have a pedestrian crossing striped across it. This complements Phase 1, the recent completion of sidewalks and a bus stop relocation across from the LISTEN store. Existing bike shoulders will not be changed. The project is going to bid on April 8 and construction will probably start in June. LPAC was supportive of the project and Ms. McCormick commented that it was a positive improvement given that many other parts of Lebanon feel defined by wide driveway/curb cuts.

The second project reviewed is the installation of new sidewalks on a segment of the south side of Mechanic Street. Ms. Hall explained that it will connect existing sidewalk on Slayton Hill Road to existing sidewalk in front of Jake’s Coffee, with the limits of construction near the American Legion (aside from a 15-foot stretch to be added in front of the Carpet Mill). This improvement was originally in the state’s Ten Year Plan (TYP) for reconstruction of the entire Mechanic Street length but in recent years, the state has had the City break improvements into multiple phases/projects and this segment is not mentioned in the near-term in the TYP project pipeline so the City has decided to address it on their own as a critical safety and connectivity gap. A driver for the current focus on this location is the potential availability of federal funding through Representative Kuster’s office and City Manager Mulholland has asked if LPAC is willing to provide a statement of support for the application. Ms. Owens elaborated that the project criteria requires it to be under \$400,000 and as a result, recommendations such as for a crosswalk and connections to the Greenway would continue to be considered but not in this project scope. Poles and retaining walls are part of the project’s constraints. Mr. Below suggested that the median dimensions adjacent to the proposed sidewalk be reconsidered in order to provide more width for the road shoulder, which cyclists use. The travel lanes are already 11 feet wide. Mr. Belensz asked if the project will try to consolidate uncontrolled access drives and Ms. Hall replied affirmatively, citing Dulac’s shop as one opportunity to increase curbing.

There was a Motion by Mr. Heisted that the Lebanon Pedestrian and Bicyclist Advisory Committee supports application by the City of Lebanon for funding to complete a sidewalk construction project between the Slayton Hill intersection and Barre Tile of NH, and further supports collaboration between the committee Chair and Planning staff to draft a letter of support.

Seconded by Mr. Kelleher.

Roll Call Vote: Members voting in favor included Mr. Kelleher, Ms. McCormick, Mr. Below, Mr. Schnur, Mr. Heisted, Mr. Amaro, and Chair Smith.

****The vote on the MOTION was approved (7-0).***

The third project reviewed is the proposed re-design of the intersection at Hanover Street and Route 120, in downtown Lebanon. Ms. Owens provided an overview of the project area, context, and recent related studies including the 2016 Downtown Vision Study, UVLSRPC draft Route 120 corridor plan, and current NHDOT I89 Exit 18/Route 120 interchange study.

Mr. Donison indicated that as part of the Vision Study, the consultant developed several conceptual alternative designs for the intersection and included a traffic memo with data on vehicle counts and turn movements. He stated that the intersection’s level of service for one of the directions is ‘F’ and that the memo and public input from the study suggest a preferred alternative for continuous northeast and southwest bound traffic flows to and from Route 120. A traffic stop would be installed for southbound Hanover Street traffic. This intersection was

1 included in the 2020 CIP budget for the City to further develop preliminary design alternatives
2 and Public Works, the Planning and Development Director and the City Manager last reviewed
3 the alternatives in August 2020. One of the alternatives is a roundabout.

4
5 Mr. Donison was asked if there will be other opportunities to look at the rest of Hanover Street
6 given that the draft plans show improvements beyond the intersection, through the whole
7 corridor down to High and Mascoma Streets. He replied that there will be opportunities for public
8 review of those other sections and agreed that the Route 120 intersection was the focus for this
9 meeting. He indicated that Public Works will present its proposal to NHDOT before its next I89
10 Exit 18/Route 120 project meeting in late April. The goal is to determine the scopes of work
11 between City and NHDOT efforts in this area, as the boundaries currently overlap and both
12 include the intersection. Mr. Donison noted that it would be ideal for NHDOT's scope of
13 improvements to include up to Summer Street so that the City could focus on expediting work
14 and funds for the remainder of Hanover Street.

15
16 Mr. Donison displayed a color-coded image of the City's preferred design, including proposed
17 pedestrian routes, bicycle routes, vehicle turn movements and landscaping. Mr. Kelleher asked
18 about the location of stop signs and the speed limit in the vicinity and there was discussion that
19 given the proximity to I89 and the highway velocitation tendencies of drivers, the City should
20 work with NHDOT to lower the speed limit entering that intersection in lieu of or in addition to
21 other traffic calming and control strategies. Mr. Donison responded that he is open to ideas. Ms.
22 McCormick asked if the multi-use path segment shown in the southeast corner of the
23 intersection, leading to a proposed crosswalk is a definite part of the plan and Mr. Donison said
24 that it would likely be feasible with some collaboration with an abutting property owner. The
25 intent of the MUP is to serve as a transition for northbound bike traffic from using bike shoulders
26 on Hanover Street, to then get onto the MUP, dismount, and cross over the north- and south-
27 bound vehicle traffic in order to continue onto Hanover Street and resume biking on the
28 shoulders. Members agreed that a MUP is preferable to a sidewalk in the proposed design but
29 noted that under current conditions, bike traffic has a simple and direct route to the other side of
30 Hanover Street in order to access the I89 pedestrian bridge. Mr. Heisted commented that this is
31 a busy intersection and there is going to be an increased learning process necessary for traffic
32 merging under the proposed design, and also asked if there are examples of similar designs
33 that function well. Mr. Donison did not have examples available.

34
35 Mr. Below recalled that this intersection has "always" been a dilemma. His opinion is that the
36 proposed design is a fairly good approach but will only work if there is a flashing light traffic
37 control or similar strategy because otherwise the constant flow of traffic, especially during
38 southbound rush hour from Route 120, will make it hard for other traffic including bikes to find a
39 break in the traffic flow.

40
41 Mr. Belenz asked Mr. Donison about the impact of removing the existing stop condition on
42 southbound 120 traffic. He suggested that it would help to think about the downstream impact of
43 having higher speed continuous traffic entering and continuing down the rest of Hanover Street
44 given the current challenges of access and exit movements in the Summer Street/Dunkin
45 Donuts area. He cited horizontal deflection as an example of potential mitigation. Mr. Belenz
46 also observed that with the proposed design, it will be unsafe for bikes trying to make a left turn
47 in-traffic from Hanover Street through northbound and southbound continuous vehicle traffic and
48 that mitigations should be evaluated for that as well.

49
50 Ms. McCormick echoed Mr. Belenz's concerns about southbound traffic and also noted that it
51 will be difficult for pedestrians to cross two lanes of traffic without there being a stop.

52
53 Mr. Amaro asked for clarification about the design at the proposed southbound Hanover Street
54 stop sign. Mr. Donison agreed that the curb could be changed at that location to make it less

1 confusing, including as relates to traffic trying to get to the gas station. Mr. Amaro stated “There
2 is a lot going on” not just for drivers but for cyclists who have to look out of a lot of issues with
3 the proposed design. He also said that with the proposed design, there needs to be some kind
4 of calming and/or indicators to those coming off of the interstate that they are entering a very
5 busy zone and that is especially true for visitors who have never come through Exit 18 to
6 Lebanon.

7
8 Mr. Donison replied that the City’s consultant could examine reducing the southbound lanes in
9 the proposed design to one lane as a way to slow traffic and also look at installing a traffic
10 warning device.

11
12 Mr. Schnur indicated that Hanover Street is part of the Safe Routes to School travel route and
13 that currently, bikes have right of way priority while cars [going south from 120] have to stop but
14 that the proposed design shows bikes having to cross several lanes of higher speed traffic.
15 While the design is less of an issue for pedestrians, it presents reduced safety from current
16 conditions for cycling. He said we know that interstate drivers do not adjust quickly and could hit
17 cyclists while going 40mph and that could be an issue.

18
19 Mr. Kelleher noted that he was hearing committee concerns about the proposed crosswalk. He
20 asked if shifting the pedestrian route to move on the west side of Hanover Street from Summer
21 Street is feasible. Ms. Owens commented that such a shift might put more north- and south-
22 bound bikes and pedestrians on the same path and in conflict with each other. Mr. Below
23 submitted that the main user of the proposed crosswalk would be northbound beginner or
24 intermediate cyclists, in addition to pedestrians, who don’t want to bike in vehicle traffic.

25
26 Chair Smith stated that his main question has to do with the origins of the preferred alternative
27 design; he is not sure how much public input there was for a detailed design and how confident
28 we can be that the proposed design will improve the ‘F’ Level of Service in contrast to the
29 sacrifice of making conditions worse for cyclist, and if not, whether it’s really necessary. If it is
30 necessary from a car traffic perspective, then he advised that we need to make the best of it for
31 ped-bike users or otherwise it will not be worth just shaving a few seconds off for cars.

32
33 Mr. Donison restated that three alternatives with different costs, \$1.5 million for the realignment,
34 \$1.9 million for the roundabout and then a no-build option were looked at with the Vision Study.

35
36 Mr. Below expressed that a potential hybrid of the no-build (do nothing) alternative that also
37 costs less would be to have continuous traffic flow but with a traffic light that has special controls
38 to sense turn and crossing movement needs for non-vehicular traffic. The light could be
39 triggered by video sensors on Hanover Street extension, for example and could give cyclists a
40 safer direct route to the pedestrian bridge. He was also not sure that a roundabout would help at
41 this location and noted that if there is a realignment with no stop controls, he liked the idea of
42 narrowing it to a single lane.

43
44 Mr. Heisted agreed that it is better to narrow lanes were possible and that his big concern with
45 the realignment still centers on traffic calming needs and how to deal with cyclist crossing
46 needs. Ms. McCormick also liked the idea of eliminating the proposed southbound right turn
47 lane to make the crosswalk safer.

48
49 Mr. Donison said he believes that Mr. Below’s concept with light controls is viable with today’s
50 technology using optical cameras that could detect cyclists too depending on sensitivity.

51
52 Mr. Schnur indicated that with there already being a stop sign for southbound traffic, the City
53 could keep that intersection as it is but add a traffic light and that would help avoid the issue of
54 no detection for bikes like what has happened at Greensboro Road in Hanover.

1
2 Ms. Chan followed up on Mr. Kelleher's prior question about locating bike traffic to be two ways
3 on just the west side of Hanover Street to avoid crossings near the intersection, saying that she
4 would like to learn more about that idea.

5
6 Mr. Amaro stated that he feels neither of the current designs being discussed, a realignment or
7 continued use of the intersection but with a traffic light, solves safety concerns for cyclists
8 particularly for those going north and who have to contend with traffic going around them while
9 constantly looking over the shoulder to find openings between cars to merge or cross the traffic.
10 That is a very rapid and advanced cycling move with little margin for error and it is not ideal to
11 make people have to get off their bikes to use the pedestrian crossing. He said that from
12 personal experience frequently cycling from West Lebanon to Centerra, he always tries to avoid
13 that intersection even in its current condition, even if it means taking the hilly back road route
14 because at least it is predictable and safer.

15
16 Chair Smith agreed with Mr. Amaro that cyclists come up against cars racing around them at
17 that intersection and that they get cut off by drivers who are in a rush. He stated that overall, he
18 is conflicted about this project and that he had problems with it back in 2016; he is very
19 concerned about the danger of the northbound route for cyclists.

20
21 Mr. Donison replied that if the City does not give NHDOT direction about its preferences for the
22 intersection then they will probably leave it as it is so this is an opportunity to dovetail City
23 improvements with NHDOT's work.

24
25 Mr. Heisted spoke to the idea of two-way cycle track routes and does not recommend them
26 based on his direct observation of head-on cyclist accidents when they're made to ride in close
27 quarters, and that it is too dangerous.

28
29 Mr. Kelleher discerned that for the NHDOT meeting on April 29th, the Committee does not seem
30 to have a decision and that if this results in the status quo for intersection conditions, that might
31 be the best thing in the short-term.

32
33 Ms. McCormick agreed with Mr. Amaro's assessment of cycling challenges and asked if
34 Clifton's idea with the lights is possible whether that could apply to people coming away from
35 downtown, to let cyclists cross safely, and not just address traffic coming into town.

36
37 Mr. Sykes said he likes the idea of a light as a temporary solution but that the Committee should
38 look at better options for cyclists because traffic will get worse and bikes are also increasing in
39 numbers. He is inclined to choose a short-term option like a light but recommends continuing to
40 study other alternatives for the long-term. He does not see the displayed diagram with the
41 proposed realignment as a way to get us to where we need to be.

42
43 ***A Motion by Mr. Below to extend the meeting to 9:20pm.***

44 ***Seconded by Mr. Heisted.***

45 ***Roll Call Vote: Members voting in favor included Ms. McCormick, Mr. Schnur, Mr. Kelleher, Mr.***
46 ***Heisted, Mr. Below, Chair Smith, and Mr. Amaro.***

47 The meeting was extended at 9:05 PM.

48 Chair Smith concluded that he did not think the Committee would reach consensus tonight and
49 wants to look at next steps and at bringing the topic up again at the next meeting. Mr. Schnur
50 responded he thought there was consensus on the addition of lights as a good option.

51 B. AARP Grant – West Lebanon Pop-Up Project

1 Mr. Belenz shared slides and an introduction to a proposed project for temporary streetscape
2 improvements, including a parklet. The concept is proposed to be located on South Main Street
3 in West Lebanon and has received a motion of support from the West Lebanon Revitalization
4 Advisory Committee (WLRAC). Mr. Belenz is assembling an application for funding through
5 AARP's Livable Communities grant and he asked if LPAC was in support of the project.
6 Members expressed significant enthusiasm for the proposal, noting that similar ideas were
7 presented by planners years ago, and that the successes of pop-up bike lanes have been in
8 recent mainstream news. There was discussion of ideas like live music from the UV Music
9 Center, food trucks and ice cream.

10
11 ***There was a Motion by Ms. McCormick that the Lebanon Pedestrian and Bicyclist***
12 ***Advisory Committee expresses its official support for, and willingness to assist with the***
13 ***implementation of, the West Lebanon pop-up project, and further authorizes Chair Smith***
14 ***to work with Planning staff to prepare a letter of support.***

15
16 ***Seconded by Mr. Heisted.***

17 ***Roll Call Vote: Members voting in favor included Mr. Kelleher, Mr. Amaro, Mr. Schnur, Mr.***
18 ***Heisted, Mr. Below, Ms. McCormick, and Chair Smith.***

19 ****The vote on the MOTION was approved (7-0).***

20 C. Ped-Bike Amendments to Development Regulations
21 No discussion based on limited meeting time remaining.

22 23 **5) OTHER BUSINESS:**

24
25 A. City and NHDOT Projects
26 See above regarding Miracle Mile, Mechanic Street and Hanover Street projects.

27
28 B. Tunnel Grand Opening
29 Ms. McCormick noted that May is Bike to School Month and that the 2021 Bike Rodeo may be
30 moved from its traditional June date to coincide with the tunnel opening on July 8th.

31
32 C. Quarterly Report to City Council
33 No discussion based on limited meeting time remaining.

34 35 **6) FUTURE AGENDA ITEMS & FOLLOW-UP NEEDS:**

- 36
- 37 ● Share Rotary grant project ideas (all)
- 38 ● Share bollard and bike friendly storm grate ideas with DPW (all)
- 39 ● LebNews – draft May and June 2021 communications
- 40 ● Special Assessment District project update (Ms. Owens)
- 41 ● Review of Bike Friendly Community designation, due in 2021 (working group)
- 42 ● Get clarifications on LFD EMS data (Mr. Schnur)
- 43 ● Review the Committee's webpages for updates (working group)
- 44 ● Explore a central document repository for the Committee (Ms. Owens)

45 46 **7) ADJOURNMENT:**

47
48 ***A Motion by Mr. Below to adjourn the meeting.***

- 1 **Seconded by Mr. Heisted.**
- 2 **Roll Call Vote: Members voting in favor included Mr. Kelleher, Mr. Amaro, Mr. Schnur, Ms.**
- 3 **McCormick, Mr. Below, Mr. Heisted, and Chair Smith.**
- 4 ***The vote on the MOTION was unanimously approved (7-0).**
- 5 The meeting was adjourned at 9:27 PM.
- 6 Prepared by Rebecca Owens, Planning Staff

**Agenda
Pedestrian & Bicyclist Advisory Committee
May 4, 2021**

**Agenda Item #4B
Study Items**

Ped & Bike Amendments to Development Regulations

ARTICLE II – DEFINITIONS

[...]

Car-sharing: A private motor vehicle or fleet that is owned, maintained and administered by an organization and made available by membership for short-term use as through a fully automated self-service reservation system requiring a one-time written agreement by the customer.

[...]

Parking, long-term bicycle: *Bicycle parking* in a weather-protected facility, intended for at least 4 hours of utilization as workday, overnight, or similar long-term bicycle storage by residents, ~~non-residential occupants~~visitors, and employees.

Parking, short-term bicycle: *Bicycle parking* provided by a bicycle rack located in a publicly accessible, highly visible location intended for transient or short-term utilization by visitors, ~~guests, patrons, and deliveries to the principal building or use, including events.~~

[...]

Shared streets: Shared roadway spaces between motor vehicles, pedestrians, and bicycles. The sidewalk and street are typically at the same level. The overall feel of the area signifies to automobile drivers that they are “guests” and should yield to pedestrians and other uses.

[...]

Universal design: A general term for buildings and systems that integrate easy-to-use, convenient design and inclusive mobility for people of all ages and physical capabilities; it complements design required by the Americans with Disabilities Act (ADA) and includes age-friendly considerations such as per AARP Livable Communities guidance.

[...]

Section 5.1 – Drawings and Other Submittals

[...]

An application for Site Plan Review shall include the following information:

[...]

Site Plan drawings shall include the following information (NOTE: The submission requirements described in paragraphs E.1 through E.4 below shall not be waivable under the procedures set forth in Article VII - “Waiver Procedure” of these Regulations):

[...]

15. The 100-year flood elevation, floodway, shoreland protection zone, and flood plain limits, where relevant.

Section 6.5 – Coordination of Roads, Parking, Loading, Recreation, and Safety

A. [...]

B. Design Standards

1. Accessible Design. Conform with the latest accepted or adopted roadway and multimodal design standards available, including but not limited to:
 - a. The City of Lebanon's Complete Streets Policy (2017) and its cited⁴ design standards. The Policy is available online using the search function of the City Manager Department's Document Center webpage or by request.
 - b. Americans with Disabilities Act (ADA) Standards for Accessible Design and ANSI Standards.
 - c. **Universal design** best practices that are inclusive of the needs of users with limited vision, mobility devices, and disabilities, in conjunction with ADA standards, such as for non-visual wayfinding with audible and tactile cues (e.g., detectable warning strips), contrasting color delineation of pedestrian, bike and other zones and edges, flush curbs on shared streets, and related design elements.
 - d. U.S. Federal Highway Administration (FHWA) Bikeway Selection Guide (2019).
 - a.e. FHWA Small Town and Rural Multimodal Networks (2016).
2. Signage and markings. All traffic control applications, signs and devices are to be pursuant to the Manual on Uniform Traffic Control Devices (MUTCD), current edition. Ensure the visibility of crosswalks in areas of high-density pedestrian traffic through use of contrasting, high-visibility surface treatments (stamped concrete, pavers, solid color-painted areas, and other textures), curb extensions, and similar measures to protect pedestrian safety. Use a consistent design throughout the site.
3. Internal Access Drives/Roads. Except as otherwise required by law, such as for truck, fire or service routes, the travel lanes of any on-site access should not be more than 10.5 feet wide.

C. Orientation and Form

1. Orientation to frontage. Buildings and building facades, including those in multi-tenant shopping plaza arrangements, must be visually and physically oriented to public ways (including sidewalks) to prioritize convenient pedestrian access and appeal from the right of way. Buildings shall also include orientation to public open spaces, trails, and waterways, such as ~~including~~ the Mascoma River, Northern Rail Trail and Mascoma River Greenway, as secondary physical and visual access opportunities where appropriate.

2. Highlight entrances. At least one primary entrance to the building shall face the public way on which the lot has frontage. If the lot has frontage on both a primary ~~street~~ and a secondary street, as defined above, the main entrance shall be oriented toward the primary street. If the lot has frontage on more than one primary street, the main entrance to the building shall be oriented toward the street that carries the greatest volume of pedestrian and vehicular traffic. An entrance on a corner along the primary street also meets the intent of this standard to provide a convenient and welcoming pedestrian access from the public way.
3. Adaptable entrance design and building massing. Pedestrian entrances shall be provided at least every 60 linear feet along the ground floor of the primary façade unless such egress would create safety or security concerns for the building's use. In such instances, a significant architectural feature that creates varied massing, such as a bay window or other feature, must be provided every 60 linear feet. No structure may be longer than 350 feet unless a pedestrian passage is provided at midway (or similar) along the structure length. The passage must be at the ground floor level ~~between of the front and rear exteriors of each side (front and back)~~ of the structure. This may be waived in industrial zoning districts.
4. Structured parking, garage and carport design.
 - a. When parking structure (e.g., parking garage) is located on a lot with frontage, the portion(s) with frontage, shall be designed to include attractive fenestrations, high-quality materials, and varied design elements. At least 1/3 of frontage-facing elements in new construction shall be **screened** by occupied active interior space for other uses at the ground floor level (retail, lobby, etc.), or at least 1/3 of the frontage must have variation in massing, substantial transparency and additional architectural detail that is distinct from the rest of the building and which visually enhances the remainder of the ground floor level. Occupied uses shall have a depth of at least 20 feet.
 - b. The visibility of multi-unit garages and carports (e.g., multifamily) from the street should be minimized by placement, scale and/or **screening**. Garages should be placed underneath or at the rear of multi-unit structures. Garages should be grouped in small clusters rather than as unbroken lines or 'corridors' or rows around the perimeter of the development. When parking is provided as individual garages (not structured parking), then garage doors should not comprise more than 1/3 of the façade at the ground floor level or should be recessed from the front plane of the primary façade.
 - c. The installation of rooftop photovoltaic solar panels is encouraged, as are provisions for **electric vehicle charging/parking** and **car-sharing** parking opportunities.

[...]

DB. Access and Traffic

1. [...]

4. All projects proposed for development, except for those in rural lands and heavy industrial zoning districts, shall install sidewalks along the street frontage(s).

a. When a location's posted vehicular traffic speeds are 25 mph or greater, there must be a 5-foot wide pedestrian facility on at least one side of the street. When the posted limit is 35mph or greater, the facilitysidewalk must be separated from the road by at least an additional 2-foot wide , such as by a 2-foot-landscaped median.

b. Sidewalks must be at least 5 feet wide (not including curb) and free of barriers and obstructions including signage, utilities, lighting and landscaping. Wider sidewalks are favored forshould be considered for primary routes in new construction.

a.c. On-site pedestrian areas may be merged with public sidewalks along the principal frontage, for a wider route overall, in order to create a broad walking surface in high traffic locations. Pavement and concrete are preferred; alternative sidewalk surfacing materials such as pavers. may be considered, such as for additional width beyond 5 feet. If the project is along a major connecting route and a sidewalk is not currently feasible, provide at minimum a level 5-foot shoulder right-of-way for potential future improvements.

b.d. Where the existing or proposed development has no alternative to the provision of vehicle parking in the front yard setback and contiguous to the roadway, appropriate pedestrian facilities must be provided elsewhere along the frontage. Provide a continuous connection between existing or proposed sidewalks.

5. [...]

6. On-site pedestrian facilities shall be provided and address the following:

i
a. Convenience. Well-marked and convenient pedestrian facilities that minimize walking distances must be provided between the primary building entrance(s), parking areas, principal frontage and adjacent public sidewalks. Minimize walking distances, to the extent practical depending on site grade, siting of common open space and similar elements. For sites with multiple buildings, uses, or residential unit entrances at the ground floor level, pedestrian walkways should connect each entrance to primary pedestrian collector routes (e.g., to parking or to public sidewalks). A common route with spur paths may meet this requirement.

- b. Visibility. Pedestrian routes must be continuous and clearly demarcated as such by application of signage, contrasting paint colors, changes in materials or textured surfacing, reflectors, landscaping, and/or attractive barriers. Surface materials must provide traction and facilitate general maintenance and snow removal.
 - c. Parking area safety. Pedestrian aisles through parking lots must be provided, and where applicable, must be separated from vehicle circulation areas for at least every four rows of parking, or at a maximum spacing of 200 feet between aisles. When the aisle is integrated with landscaped islands between rows, the landscaped island must be at least 12 feet wide. Aisles must be at least 4 feet wide.
 - d. Crossing safety. Pedestrian crossings are required when the walking route crosses vehicle circulation areas. To identify crossing points, and support visibility, safety, and wayfinding, the transition area at street or drive crossings and between parking lot walkways and entrances, shall be highlighted through curb extensions (bump outs), contrasting materials, planters, pedestrian-scale lighting such as decorative bollards, and landscaping, including adherence to Sec. 6.2.B. Any raised crossings must meet requirements for drainage and snow removal equipment and should be flush with the height of the adjoining sidewalk and at least 10 feet wide to allow the front and rear wheels of a passenger vehicle to be on top of the table at the same time.
 - e. Connectivity. Connect neighboring commercial properties at the side and rear lot lines with pedestrian facilities (path or sidewalk) when public routes are not available within 100 feet. Locate facilities to connect to existing parks and trails, and/or according to City plans for connectivity improvement needs, where they exist. Alternatives may be permitted where it is determined that there is insufficient potential for utilization, steep slopes, or other contextual challenges. For adjacency to conservation properties, work with the Conservation Commission to accommodate accesses, where deemed to be appropriate by the Commission. Prioritize use of new or existing corridors, such as sewer easements. Seek and obtain public access easements for future non-motorized access.
7. Access management. Minimize curb cuts along a property edge onto the public right-of-way, particularly along heavily used pedestrian corridors, and provide a continuous circulation system within the property. Link a road or driveway with the overall site circulation patterns of adjacent parcels. For improvements to existing developments, redundant access points must be evaluated for closure or limited access, such as for fire lanes. A driveway intersecting a street that constitutes the principal frontage of a lot is not permitted when the lot can be accessed from another frontage or when the lot can be accessed by a shared driveway on an adjacent property with an existing or planned curb cut/access. Prioritize use of connections to

secondary cross-streets. Service drives for loading and drop-off zones shall be designed as alleys at the rear of a lot or subdivision whenever possible.

8. Shared streets. In cases where traffic speed and volume are low, an internal roadway/drive may be designed as a **shared street**. This would be a thoroughfare without sidewalks or striped lanes. Vehicle, bicycle, and pedestrian movement are mixed and movement must be adequately controlled through **traffic calming** and safety features as well as landscape and amenity elements to the satisfaction of staff and Planning Board review.
9. Transit. If a property borders or is planned to host an existing, proposed, or planned (i.e., mentioned in an active plan) **transit** stop or dedicated **transit** route, considerations for on- and off-site street design must be detailed in the application. Correspond with the transit authority and City officials to verify service and review proposed design changes. Considerations for appropriate design include: pavement markings, crosswalks between stops, adjacent sidewalks and site access for pedestrians/bus riders, snow removal accessibility and responsibility for stops, curb height, spacing of **transit** stops, dimensions of **transit** stop space (e.g., for bus shelter pad), bulb-out or pull-out, sidewalk tip-down, distance from intersections and drive accesses, shelters, street furniture, signage, and lighting. Safe access must be provided to and from the main development entrance(s) to the **transit** stop. Pedestrian access to the **transit** stop must limit crossing points and distance over parking facilities, driveways, and vehicular rights of way. Specifications must adhere to City construction and lighting policies for elements in the public way.
10. Transportation demand management. Higher density buildings and larger businesses may be required to submit a mobility management plan that addresses implementation of transportation demand management programs and services.
11. Sightlines. To ensure sightlines are maintained at pedestrian crossings on or between public and private streets, provide at least 15 feet of no parking on either side of the crossing, if there is not a curb extension at the crossing. Trees, structures, signs, and other visual obstructions must also be set back from all pedestrian crossings for appropriate visibility. Where surface markings do not provide enough visibility or there is a high volume of pedestrian traffic, such as between a building entrance and a parking facility, pedestrian crossing signs shall be installed on both sides of the crossing/crosswalk.

[...]

Fl. Bicycle Storage and Parking

The intent of this section is to enhance bicycle usage, support transportation efficiency by reducing reliance on vehicles for short-distance travel, and improve public health. The requirements of this section shall apply to new developments as well as changes to or expansions of use at existing developments.

1. Residential development. Multi-family dwellings with more than five (5) units must provide:
 - a. **Short-term bicycle parking** for at least 15 percent of units (e.g., 50 units = 8 spaces)
 - b. **Long-term bicycle parking** for at least 30 percent of all building units.
2. Non-residential development. Other uses, including municipally owned buildings, must provide:
 - a. Secure **short-term bicycle parking** or **long-term bicycle parking** for at least ten (10) percent of the number of automobile parking stalls approved by the Planning Board. Alternatively, provide spaces for at least 5 percent of building occupants (measured at average daily peak), whichever is greater, but in no case may the total be less than two (2) rack spaces.
 - b. At least 25 percent of the spaces as **long-term bicycle parking** when the total number of bicycle parking spaces required exceeds 20 spaces.
 - c. Bicycle parking wayfinding signage.
3. When a calculation yields a fractional number of required spaces, the number of spaces shall be rounded up to the nearest whole number.
4. Facilities must adhere to Lebanon's Bike Storage Design Guide, available online on the Planning & Development Department's Documents, Studies and Resources webpages or by request.
5. Bicycle parking should be located with convenient access to a principal building's main entrance and/or to a recreational facility and its associated transportation network, such as a public street or path.
6. Locate parking/storage in a well-lit, highly visible area.
7. Shared **bicycle parking** facilities are encouraged.
8. **Bicycle parking** may be required by the Planning Board for commercial uses whenever any new use is established, or any existing use is expanded for which more than ten (10) automobile parking spaces are required.
9. Shower and changing/locker storage facilities are encouraged to be provided in non-residential development. Facilities should be accessible in the building, or within 200 yards of the building entrance (such as in tenant

properties with shared facilities). One facility is equivalent to at least one shower stall and five locker units. When provided, there should be at least one facility for every four (4) bike spaces required.

10. The Planning Board may adjust any of the amounts in this section upward or downward based on factors such as the site location, site characteristics and layout, the types of users and residents, the amount of vehicle parking provided, and other pertinent factors.

[...]

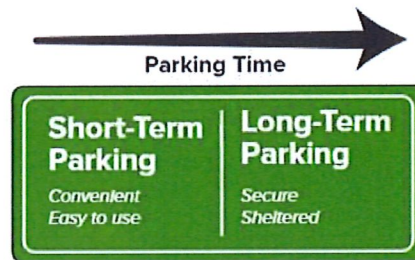
Lebanon Bike Storage Design Guide **DRAFT**

The purpose of this guide is to support requirements in the City's Site Plan Review development regulations.

The benefits of providing bicycle parking/storage and associated ped-bike facilities like lockers and showers include their value in supporting a community and properties that are:

- **Equitable:** Bike-friendly housing and workplaces enable accessibility for affordable transportation/housing and also protect cyclists' investments in equipment, especially for those who do not own cars.
- **Manageable:** For property managers, storage helps protect elevators, walls, carpets etc. as bikes are not brought indoors to apartments/offices. Also prevents hazards and eyesores of random parking.
- **Economical:** Less expensive to build than vehicle parking, better land use and saves on law enforcement resources (less impoundment).
- **Desirable:** Attract employees and residents—many value such features.
- **Impactful:** Racks and showers facilitate an active, healthy community benefiting cyclists and whole community, also reducing traffic/emissions.

Two types of bike parking are required in Lebanon's Site Plan regulations, **Short-Term** and **Long-Term** storage.



Short-term bicycle parking/storage includes racks and comparable equipment that is convenient and easy to use, for parking periods less than 4 hours.

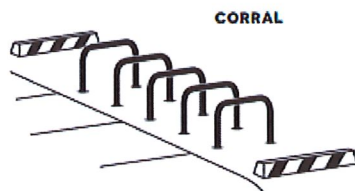
- (1) Must be simple to operate and have as few moving parts as possible.
- (2) Must be easily accessed from the street and protected from motor vehicles. Locate no more than 50 feet walking distance from a major pedestrian entrance, with direct access (e.g., a walking route). Access must be at least 5 feet wide with a grade no greater than 8 percent; landings may be considered.
- (3) Must not obstruct other uses. May be in front or rear setbacks as long as adequate spacing of the racks is assured and so that the right-of-way is not obstructed; do not block foot traffic and vehicle driver sightlines and have a minimum height of 2.5 feet so as to not create a tripping hazard. Support clear and maneuverable bike/rider access, ability for snow removal equipment to navigate around the rack and adequate clearance from vehicle parking, curb ramps, transit loading areas, utility poles, etc.
- (4) Covered parking, when required per Site Plan Review regulations, must provide enclosure from the elements. Otherwise, sheltered racks may be integrated with the primary structure's weather protection (e.g., awnings, porches).
- (5) Each side of a rack may count as a required space where a bike can be locked on both sides of the rack component without conflict.
- (6) Types of short-term storage (examples illustrated below):
 - a. should accommodate a wide range of bicycle shapes and sizes

- b. must have a no-maintenance finish that won't chip, peel, or rust, with galvanized steel finishes preferred
- c. must be securely anchored on a permanent, tamper-proof fixed surface for stability
- d. must be functional for both U-locks and cable locks,
- e. must support a standard bicycle at 2 points of contact to prevent damage to the bicycle wheels and frame, allowing the bike to stand upright with both wheels on the ground (without requiring kickstand to stay upright and without requiring support by the wheel-only)
- f. preferred permanent fixture styles include: the rail/staple/A type rack made of 2" galvanized pipe, 54" long by 32" high, which holds two bikes; the inverted U-rack; or cycle-stall corrals
- g. temporary fixture styles, such as for monitored event parking include public on-street or on-sidewalk corrals with installation coordinated by the City; these are encouraged for large events to reduce traffic impacts and vehicle parking needs.

Sample Acceptable Bike Storage



POST & RING



CORRAL

Sample Unacceptable Bike Storage

RACKS TO AVOID

Because of performance concerns, APBP recommends selecting other racks instead of these.

WAVE
also called undulating
or serpentine



Not intuitive or user-friendly; real-world use of this style often falls short of expectations; supports bike frame at only one location when used as intended.

SCHOOLYARD
also called
comb, grid



Does not allow locking of frame and can lead to wheel damage. Inappropriate for most public uses, but useful for temporary attended bike storage at events and in locations with no theft concerns. Sometimes preferred by recreational riders, who may travel without locks and tend to monitor their bikes while parked.

COATHANGER



This style has a top bar that limits the types of bikes it can accommodate.

WHEELWELL



Racks that cradle bicycles with only a wheelwell do not provide suitable security, pose a tripping hazard, and can lead to wheel damage.

BOLLARD



This style typically does not appropriately support a bike's frame at two separate locations.

SPIRAL



Despite possible aesthetic appeal, spiral racks have functional downsides related to access, real-world use, and the need to lift a wheel to park.

SWING ARM SECURED



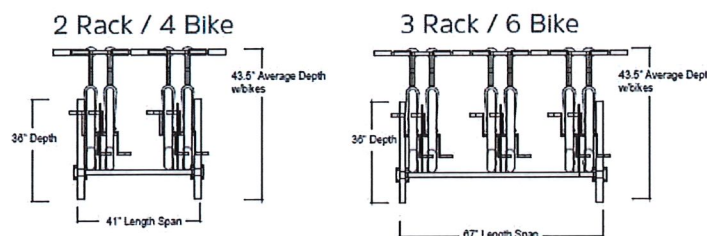
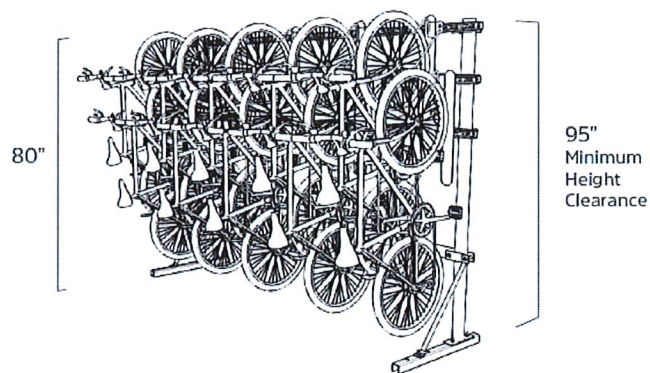
These racks are intended to capture a bike's frame and both wheels with a pivoting arm. In practice, they accommodate only limited bike types and have moving parts that create unneeded complications.

For additional ideas → See the links under the References section below, particularly #4, APBP.

Long-term bicycle parking/storage includes lockers and rooms that are secure and fully sheltered, for parking of 4 hours or more.

- (1) Shall be intended primarily to serve residents, employees or other persons who would require storage of a bicycle for a substantial portion of the day, for an overnight period, or for multiple days; however, it may serve other bicycle users as needed.
- (2) Provide secure individual spaces (separate from other bikes) or permit bicycles to be secured individually, with tamper-proof built-in locks or ability to be locked individually.
- (3) Locate within 50 feet walking distance of any functional entry and be easily accessible to all building users.
- (4) Dedicated lockers etc. do not require assignment per unit. Long-term bicycle storage may be utilized for general storage needs in addition to bike parking, where space is designed for such and to maximize utilization of space, however dedicated bike storage should not also serve as the primary storage space for units.
- (5) To accommodate a range of physical capabilities, provide a minimum 50 percent of racks which do not require the user to lift their bike above the floor or ground more than 1 foot, and which store the bicycles in a horizontal position (upright with both wheels parallel to the surface where the rack is installed).
- (6) Must be in a high-visibility and/or separate limited access space that is fully sheltered/enclosed to protect bicycles from precipitation and theft.
- (7) Acceptable long-term storage space types include but are not limited to the following types (examples illustrated below):
 - a. Motor vehicle garages. Structured vehicle parking such as individual/separated vehicle garage units with adequate additional spacing for bikes may meet this requirement.
 - b. Bicycle lockers or pods. Individual locked enclosure, indoors or outdoors, for one bicycle.
 - c. Bicycle rooms. Located in private building or multifamily housing with access control. May be located in a publicly accessible storefront with attendant or access control. May include other amenities such as showers, changing areas or clothing lockers.
 - d. Bicycle cages. Located in private buildings or multifamily housing parking garage with access control.
 - e. Bicycle parking structure. Also known as a secure parking area. Standalone structure with access control, such as by an attendant or security system. Appropriate for campuses and similar building clusters, or adjacent to residential or office buildings as accessory uses.
 - f. Bicycle parking station. Space protected continuously by a security system, such as camera surveillance or an attendant or co-located with transportation facilities, e.g., parking garage, bus shelter, Park & Ride.





For additional ideas → See the links under the References section below, particularly #4, APBP.

Sample RESIDENTIAL Bike Rack Calculations (based on formulas in the Site Plan regulations)

**round up to nearest whole number*

- Short-term storage – 15% of units
 - 5 units = 1 outdoor bike spaces
 - 50 units = 8 outdoor bike spaces
 - 100 units = 15 outdoor bike spaces
- Long-term storage – 30% of units
 - 5 units = 2 covered bike spaces/storage units
 - 50 units = 15 covered bike spaces/storage units
 - 100 units = 30 covered bike spaces/storage units

Sample NON-RESIDENTIAL Bike Rack Calculations (based on formulas in the Site Plan regulations)

- Short-term storage – 10% of auto spaces OR 5% of occupants
 - 5 auto spaces = 2 outdoor bike rack spaces (min. to provide at least 2)
 - 50 auto spaces = 5 outdoor bike rack spaces
 - 100 auto spaces = 10 outdoor bike rack spaces.
- Long-term storage – only if over 200 auto spaces, provide 25% of the required 20 total bike rack spaces as LT storage
 - If 200 auto spaces and 20 bike rack spaces required, 25% or 5 of those must be LT storage.
200 car stalls = 15 outdoor bike stalls + 5 covered bike stalls
 - If 300 auto spaces and 30 bike rack spaces required, 25% or 8 of those must be LT storage.
300 car stalls = 22 outdoor bike stalls + 8 covered bike stalls

General Guidance for All Bike Storage

Enhancements and storage with flexible dimensions are encouraged (e.g., charging outlets or extra space for *electric bikes, integration with public artwork, repair/air pump kiosk, automated doors, bikeshare programming, adaptive tricycle and recumbent bike parking etc.).



Alternate designs will be considered provided the design meets or exceeds the intent of this section, with reference recommended to the FHWA University Course on Bicycle and Pedestrian Transportation, Lesson 17 (2006) and American Association of State Highway and Transportation Officials (AASHTO) *Bicycle Guidelines* and *Bicycle Parking Guidelines* (2002) for “recommended” (e.g., post & loop, inverted “U” or “staple”, “A”) and “not recommended” (e.g., wave, toast, and comb) bicycle racks.

**Note: an “e-bike” is a bicycle equipped with a low-speed electric motor. In New Hampshire, E-bikes are typically allowed on public ways, where not otherwise regulated (N.H. Rev. Stat. §259:6, 259:27, 265:144, effective as of August 18, 2019). There are three classes of pedal and no-pedal assist e-bikes.*

Related References

1. 2012 Lebanon Master Plan

OUTCOME 1: Continue revitalization of the Lebanon Central Business District.	
3.1.A8	Provide improved and attractive streetscape amenities, such as movable planters, seating, adequate trash cans, and bicycle racks throughout the CBD.
50 percentOUTCOME 1: Promote revitalization of the West Lebanon CBD to improve the viability of its businesses and vitality of surrounding community.	
4.1.A10	Develop a plan for a safe, convenient, and attractive network of pedestrian paths, bikeways, and bike lanes, including connections to parks and transit stops, as well as bike racks .
OUTCOME 4: Promote active living, biking and walking as part of the daily routine, which has dramatic improvements in public health.	
9.4.A4	Install bicycle racks, showers, and lockers in public spaces throughout the community.
9.4.A5	Require developers to install bicycle racks, showers, and lockers as part of site plan approval.

2. Lebanon Complete Streets Policy

Lebanon’s Complete Streets [Policy](#) notes under design guidance that “The City shall utilize the latest accepted or adopted design standards available, including [NACTO and AASHTO]”

3. Lebanon – 2017 Bike Friendly Community

The [report card](#) includes key next steps: “Policies and practices relating to bicycle parking could be improved. Studying current bike parking and future needs would be a good step for continued coordination with transit and potentially developing community bicycle branding.”

4. Association of Pedestrian and Bicycle Professionals (APBP)

[Essentials of Bike Parking](#)

5. NACTO

[Bicycle Facilities Guide](#)

6. Upper Valley Transportation Association

[Mobility Checklist](#): Does the development proposal include 6. Ample, convenient, sheltered, and secure bicycle parking?

7. North Country Council

Bicycle Parking Guidance (forthcoming)

8. Federal Highway Administration (FHWA)

[Bicycle Parking and Storage Lesson Plan](#)

9. Examples of Similar Municipal Requirements

- Off-street bicycle parking may be required by the Planning Board in the Commercial Zones whenever any new use is established, or any existing use is enlarged for which more than 10 auto parking spaces are required. ([Kingston, NH](#))
- Similar to Kingston, but for all zones, with min. 2 stalls; must have stalls for 5%/3% of vehicle parking for 25-100 spaces/over 100 spaces ([Merrimack, NH](#))
- Similar to Kingston, including same %'s ([Stratham, NH](#); [Londonderry, NH](#)). Londonderry also notes provision of additional amenities including but not limited to covered parking and shower facilities is encouraged for lots >100 auto spaces.
- All sites shall provide lockable bicycle parking/storage. The number of bicycles which must be facilitated shall equal not less than 5% of the site parking demand, but not be less than 2. Developments that provide for on-site shower facilities for employees that bicycle, jog, or walk to work may be allowed additional parking waivers. ETC. ([Barrington, NH](#))
- Bicycle racks shall be provided for all development that provides 5+ parking spaces or where such would be required. For residential multi-unit developments with >20 residents, a covered area shall be provided to protect bicycles. ETC. ([Durham, NH](#))
- All sites shall provide lockable bicycle parking/storage. The number of bicycles... shall equal not less than 5% of the site parking. All non-residential sites with 20,000 square feet or more of floor space may reduce the provision of on-site parking by 5% by providing shower facilities and bicycle parking/storage for employees choosing to bicycle to work ([Newmarket, NH](#))