



**LEBANON PEDESTRIAN AND BICYCLIST ADVISORY
COMMITTEE
SEPTEMBER 1, 2026 - 7:00 PM
COUNCIL CHAMBERS, CITY HALL OR
REMOTE VIA VIRTUAL PLATFORM
LEBANONNH.GOV/LIVE**

1. Call to Order

- A. To participate in this meeting, please [join live via Microsoft Teams](#) or call 929-229-5356 (access code: 274 017 479#). If you have trouble accessing this meeting, please [email Catheryn Hembree](#).

2. Approval of Minutes

- A. August 4, 2026

3. Open to the Public

4. Study Items

- A. Priority Projects Draft Presentation
B. 2016 Downtown Vision - 10 year update
C. Communications Plan - Dark Nights Article

5. Other Business

- A. Updates from Other Boards
- Planning and Development
 - Planning Board
 - City Council
 - Police Reports
 - Mascoma River Greenway Coalition
 - Class VI Roads
 - Communications Plan

6. Future Agenda Items

7. Adjournment

The order of agenda items is subject to change.

Meetings are open for in-person and remote attendance. Members of the public who wish to attend remotely may do so 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 City's virtual platform or by phone. Please note: Should technical difficulties occur during the meeting that disrupt virtual or phone connection(s), the meeting will continue without remote access capabilities.

Any person with a disability who wishes to attend this public meeting and needs additional accommodation, please contact the ADA coordinator at City Hall by calling 603-448-4220 at least 72 hours in advance so that the City can make any necessary arrangements.

1 **DRAFT**

2 Lebanon Pedestrian-Bicyclist Advisory Committee
3 Remote Via Microsoft Teams
4 Lebanonnh.gov/Live
5 Tuesday, August 4, 2026
6 7:00 PM
7

8 Members Present: Colin Smith (Chair), Trenton Meckenstock, Tim Gilbert, Lynnette
9 Madsen, Alan Schnur (Alt), and Ben Swanson (Alt).
10 Members Absent: Sean Dittrich (Vice Chair) Erling Heistad, Marie McCormick, and Kellen
11 Appleton
12 Staff Present: Catheryn Hembree (Associate Planner)
13

14 **1) CALL TO ORDER**

15
16 Chair Smith appointed Mr. Schnur and Mr. Swanson to vote in place of regular members
17 Ms. McCormick and Mr. Dittrich, who were absent at the time. Ms. Madsen joined
18 virtually.
19

20 **2) APPROVAL OF MINUTES**

21
22 *A MOTION to approve the minutes June 2, 2026, was made by Mr. Schnur. Seconded*
23 *by Mr. Meckenstock.*
24 **The vote on the Motion was passed unanimously, 7-0.*
25

26 **3) OPEN TO THE PUBLIC**

27
28 None at this time.
29

30 **4) STUDY ITEMS**

31 **A) Discussion Re Planning Board Application: LWM Residential, LLC 1 Foundry**
32 **Street, Tax Map 91, Lot 263:** Conceptual Review of a required conceptual
33 application for the Planning Board.
34

35 Ms. Hembree gave a summary of the project and what the Pedestrian Bicyclist
36 Advisory Committees role was when reviewing a proposed project. The Advisory
37 Committee reviewed the submitted application and discussed ways to make the
38 project more friendly to pedestrians and bicyclists. Suggested changes include:
39 1. Provide long-term and short-term bicycle parking for visitors and residents.
40 2. Recommendation: Adding EBike chargers and a Bike Fix Station

- 41 3. PBAC recognizes the left turnout of Foundry Street could be hazardous. A
42 suggestion for improving this concern is to open the pedestrian mall up to cars
43 to allow two means of egress from the site. Traffic mitigation on to Mascoma
44 is a big concern and needs to be addressed.
45 4. Require a deeded public right of way to access the river walk to make sure it
46 stays open to the public and not just residents.
47

48 Mr. Smith agreed to write the memo to the Planning Board on behalf of PBAC.
49

50 Item B was postponed to see if Ms. McCormick arrives to lead the discussion.
51

52 **C) Priority Projects Discussion**

53

54 Ms. Hembree explained that many PBAC projects are being reviewed by Council
55 during budget discussions. There are many new Council members that were not
56 elected when several of the projects were being studied and planned. They are just
57 seeing the cost of the implementation. It was recommended the during the 3rd quarter
58 reports, PBAC presents the history and necessity of their priority CIP projects.
59

60 Mr. Smith stated he was working with Mr. Dittrich on the presentation which
61 Councilor Appleton would share with the Council. The Committee discussed the
62 projects on the CIP list. Mr. Swanson asked about listing priorities. Mr. Schnur agreed
63 that identifying priorities would be beneficial. Discussions continued about the
64 projects and their status. The Committee also discussed projects they would be fine
65 with being cut from the budget.
66

67 Mr. Smith and Mr. Dittrich will bring a draft presentation to the September meeting
68 for PBAC to review and comment on.
69

70 **D) Complete Street Update**

71 Ms. Hembree stated the approval of the updated complete streets policy should be on
72 the Council agenda in October.
73

74 **B) LMS – How to Bike to School Event on August 24th**

75

76 Ms. Hembree stated that Lebanon Middle School is interested in PBAC hosting
77 another Bike to School event on August 24, right before their open house at 4pm. Ms.
78 McCormick will coordinate with the school to advertise the event. Mr. Smith and Ms.
79 Hembree volunteered to ride with Ms. McCormick and the students the day of the

80 event. A 3:30pm start time from the CCBA Northern Rail Trail trailhead was
81 suggested.

82
83 **5) OTHER BUSINESS**

84
85 Updates from other Boards:

86 Ms. Hembree invited PBAC to attend the Soldiers' Memorial Building Open House on
87 Thursday from 4-6PM.

88
89 Mr. Swanson suggested during the Council presentation, PBAC addresses pedestrian
90 safety at Slayton Hill Road and Mechanic Street. The concern is that if the proposed
91 roundabout is going to be cut or delayed, something needs to be done to create a safe
92 pedestrian crossing.

93
94 Mr. Schnur noted that, for the month of May, there were zero crashes involving either a
95 pedestrian or a bicyclist. Fo the month of June, there was 1 crash involving either a
96 pedestrian or a bicyclist. This leads to a total of two for the year to date, which is
97 significantly less than the 6 Lebanon had the previous year for the same time period.

98
99 **6) FUTURE AGENDA ITEMS**

- 100
101 1. Priority Projects presentation draft
102 2. Review of the 2016 Downtown Vision Plan – 10-year update
103 3. Communications Plan – Night Riding Safety Article
104

105 **7) ADJOURNMENT**

106
107 *A MOTION was made by Mr. Gilbert to adjourn the meeting. Seconded by Mr.*
108 *Meckenstock*

109 **The vote on the Motion was approved unanimously.*
110

111 **The meeting was adjourned at 8:10PM**



City of Lebanon, NH

Downtown Vision Plan and Tunnel Assessment



Lebanon, NH Downtown Visioning Study

Appendices

November 2016

Appendix

A Tunnel Engineering Report

Lebanon Tunnel

In association with Downtown Lebanon Visioning Study

PREPARED FOR



City of Lebanon
193 Dartmouth College Highway
Lebanon, NH, 03766

PREPARED BY



2 Bedford Farms Drive
Suite 200
Bedford, NH 03110
603.391.3900

9/8/2016



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ENGINEERING REPORT

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Appendix A2 – Interim Repair Options

Location and Features

Location

The tunnel is located along an abandoned railroad corridor and is bounded by Hanover Street (NH Route 120) to the south and situated between Taylor Street to the north and west and Court Street to the east. The tunnel structure is located on City parcels 91-230 and 91-237. A portion of the tunnel is under a parking lot and a portion is also under a pedestrian mall plaza. See Figure 1.1.

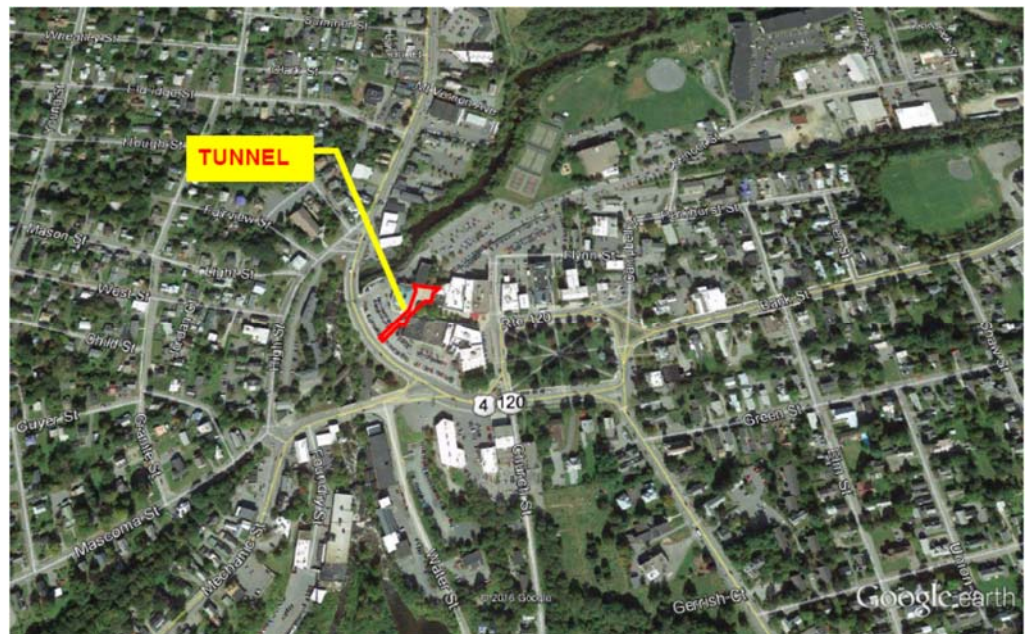


Figure 1.1 – Location Map

Features

The tunnel is approximately 280 feet in length with a width that varies from 17 feet to approximately 76 feet. See Figure 1.2.

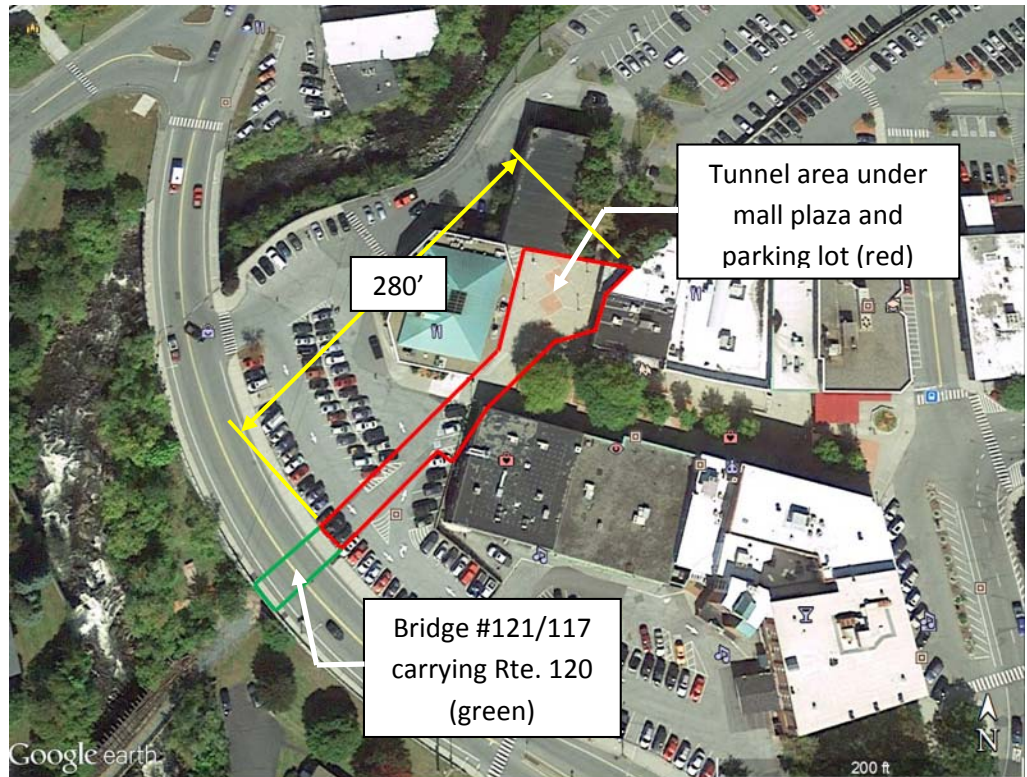


Figure 1.2 – Tunnel Limits

The tunnel consists of pre-stressed concrete slabs supported on retaining walls, abutments, and piers that support an elevated mall plaza and parking lot. See Figure 1.3 for a general depiction of the structural components and Figure 1.4 for a view of the plaza area above the tunnel.

For the purpose of describing tunnel features and related elements, the tunnel orientation is assumed as west/east with the bridge carrying Route 120 (Hanover Street) at the west end.

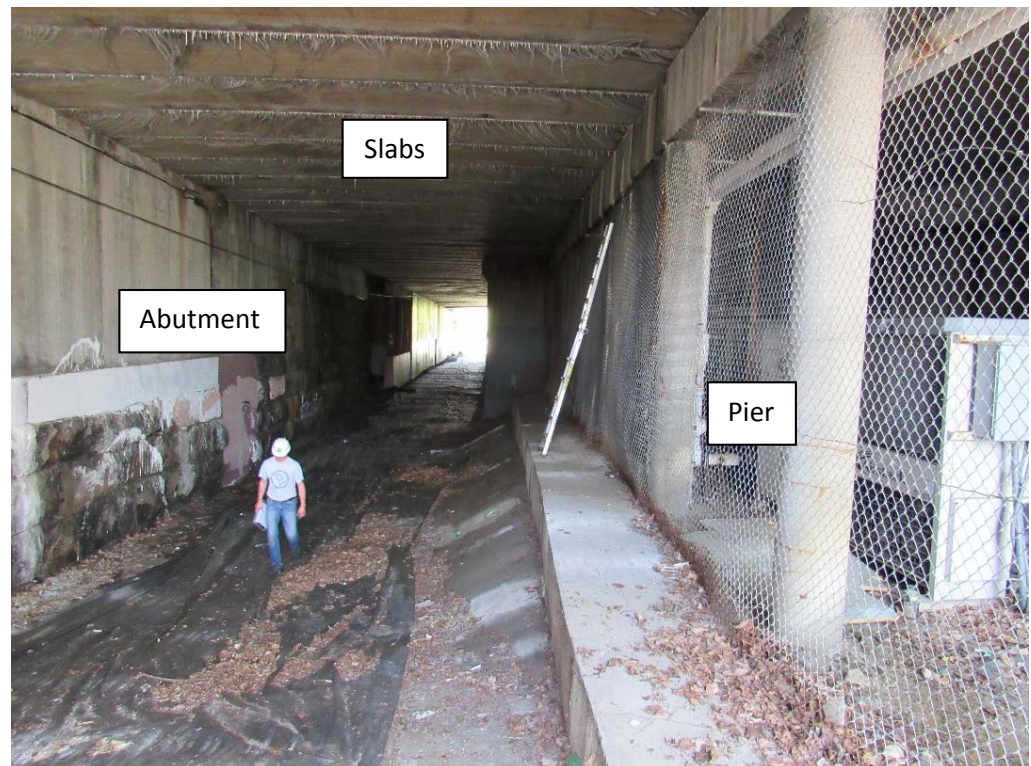


Figure 1.3 –Tunnel Components

The tunnel was constructed circa 1969 as part of an urban renewal project following “The Great Fire” of 1964 that destroyed a significant amount of buildings and other infrastructure in this area of the City. The tunnel was designed to accommodate an active railroad and provide the necessary clearances for the trains.

Slabs

The slabs that comprise the tunnel roof are rectangular precast concrete beams that are butted together. Each beam is approximately 4’ wide and 12” deep with varying span lengths. There are no record drawings of the beams to confirm the configuration of the primary reinforcement and analyze the structural capacity.



Figure 1.4 –View of plaza looking southwest

Abutments

The abutments consist of full-height, reinforced concrete cantilever walls and stone masonry walls with reinforced concrete wall extensions. The hybrid abutment sections are located at the east end of the tunnel along the south side. Existing plans indicate the 1969 full-height abutment sections near the west end of the tunnel are supported by spread footings on soil.

There are no plans or record drawings of the stone masonry walls that predate the tunnel construction.

Piers

The piers are located along the eastern half of the tunnel where the buildings are in close proximity. The piers support the edges of the slabs near these buildings or reduce the span length required for beam slabs. The piers are reinforced concrete with rectangular caps supported on 14" diameter circular columns. Existing plans indicate all the piers are supported on spread footings or mat footings on soil. There are three piers located along the north side and one on the south side. The pier on the south side, about halfway along the tunnel, includes a stub wall that extends about 8' above the footing.



Figure 1.5 –View of pier looking south

Existing Conditions

Structure Inspections

An inspection and evaluation of the superstructure (slabs) was completed by Hoyle, Tanner Associates Inc. (HTA) on May 21, 2014. Based on HTA's findings that the prestressed concrete slabs are in "poor to very poor" condition, the tunnel is closed to pedestrian access with chain link fence at each end and the parking area above the tunnel is barricaded to keep vehicular traffic off the concrete slab superstructure.

The City monitors how much debris falls from the roof slabs by circling the pieces of concrete that are visible on a fabric cloth that is placed on the ground surface.

VHB completed an inspection and assessment of the Lebanon Tunnel on September 9, 2015, to determine the general condition of the tunnel substructure (abutments and piers).

A small portion of the south abutment walls near the east end of the tunnel was not accessed based on the confined layout of partitions and other structures in this area.

Abutments

The north and south abutments are in satisfactory condition. Both abutments have localized areas of minor spalling (surficial defect where concrete is missing) and delamination (surficial defect where outer concrete has separated from the underlying reinforcing steel) along the walls. Portions of the north abutment bridge seats (top of walls that support the concrete slabs) have minor spalling, splitting and delamination along the visible edge (see Figure 2.1).

The south abutment, at the east end of the tunnel, also includes a stone masonry lower wall with a reinforced concrete upper section. The stone masonry abutments are in satisfactory condition, along with the upper concrete portions of the wall.



Figure 2.1 – cracking at top of abutment

Piers

The south pier is in satisfactory condition. No significant deficiencies were observed. Two of the north pier caps are in fair condition; the third north pier cap is in satisfactory condition. The two caps in fair condition have areas of spalling, delamination and cracking (see Figures 2.2 and 2.3). Three north pier columns have areas of splitting and delamination (see Figure 2.4).



Figure 2.2 – Pier cap spall



Figure 2.3 – Pier cap splitting



Figure 2.4 – Column splitting

Other Observations

During the inspection of the substructure, VHB also observed the following:

- Parking lot settlement behind each abutment (up to 2")

- A corner of the building, located at 31 Hanover Street, at the east end of the tunnel, is supported by portions of the superstructure. This portion of the building will be impacted by superstructure removal. (see Figure 2.5)



Figure 2.5 – Building partially supported on superstructure

- The northeast corner of the planter, located on the parking lot side of the Lebanon Diner at 24 Hanover Street, is supported by portions of the superstructure. There is a settlement crack at this support. The planter will be impacted by superstructure removal. (See Figure 2.6)



Figure 2.6 – Settlement crack at planter

- A utility conduit extends the length of the tunnel along the south abutment. A second utility conduit enters the tunnel from the east entrance and extends approximately 100 ft. into the tunnel, along the south abutment, before terminating. Various utility cables are also present at the east end of the tunnel.



Summary of Existing Conditions

The tunnel substructure is generally in satisfactory condition. The abutments require minor rehabilitation and limited reconstruction of the bridge seats to extend the life of the abutments another 50 years or more. The existing piers require more extensive rehabilitation than the abutments. Two of the north pier caps require replacement and three columns require repairs or replacement. To extend the life of the piers another 50 years or more, all pier columns and pier caps should be reconstructed.

The precast, prestressed concrete superstructure slabs are in very poor condition and require replacement.

Tunnel Alternatives

General Considerations

VHB completed a tunnel alternatives study that included several potential treatments based on cost, trail connectivity, parking and plaza functionality, safety, future maintenance, and compatibility with the Downtown Visioning concepts. The alternatives include:

- Alternative 1 – Complete Deck Replacement
- Alternative 1A – Deck Replacement with Opening Area
- Alternative 2 – Deck Replacement with Partial Fill and Opening
- Alternative 3 – Tunnel Removal and Roadway Reconstruction

Schematic concepts of the tunnel treatment alternatives are provided in **Appendix A1**.

Since it may take time to fund and implement the selected alternative, VHB also developed two interim repair options to allow the trail to be reopened and/or reestablishment of the parking area above the tunnel. These options include:

- Option 1 – Temporary Shielding Structure Inside of the Tunnel
- Option 2 – Temporary Shielding & Partial Deck Replacement at Parking Lot

Schematic concepts of the interim repair options are provided in **Appendix A2**.

Tunnel Treatment Alternatives

Alternative 1 – Complete Deck Replacement

This alternative includes replacing the precast deck beams with a new cast-in-place concrete slab. The upper abutment walls would be repaired and the existing piers



reconstructed to support the new deck. The trail would include a new gravel base and pavement surface with security lighting along the tunnel. The wearing surface in the parking lot and plaza would be replaced with a surface similar to the existing (pavement and decorative concrete).

This alternative provides trail connectivity and restores parking and vehicular access along the topside of the tunnel. The cast-in-place deck is a durable structure configuration that reduces the number of joints susceptible to leaking and deterioration. A cast-in-place deck can also be easily fitted to the variable geometry of the adjacent buildings, support locations, and custom utilities and appurtenances that may need to be embedded or secured to the structure.

The estimated cost of this alternative (including design and construction administration) is approximately \$2 million.

Alternative 1A – Deck Replacement with Opening

This alternative is similar to Alternative 1 except a portion of the deck near the west end is omitted to provide an opening to the sky. The perimeter of the opening is protected with an ornamental railing and/or parapet. The exact limits and location of the opening would be determined in final design.

The estimated cost of this alternative (including design and construction administration) is approximately \$2 million.

Alternative 2 – Deck Replacement with Partial Fill and Opening

This alternative is evaluated to determine if filling in portions of the tunnel results in significant cost savings. This alternative assumes the trail is rerouted elsewhere so that a portion of the tunnel at the western end could be filled in and the concrete deck eliminated. This requires a new wall at the west end next to the bridge carrying NH Route 20 (Hanover Street) unless that bridge is also removed and filled in under a separate project (programmed for replacement or reconstruction in the 2016 NHDOT 10-year plan. Options for the bridge are not included in the scope of this study or report). A portion of the plaza area at the east end of the tunnel by the existing stairs is opened to the sky to provide natural lighting and reduce the amount of new concrete deck. The parking lot is reestablished where the tunnel is filled in and/or new deck is constructed.

The support piers and upper abutment sections near the east end of the former tunnel would be reconstructed in a similar fashion as Alternative 1. The wearing surface in the parking lot and plaza would be replaced with something similar to the existing (pavement and decorative concrete). The function and treatment of the former tunnel area at the east end would need to be determined by the City and abutters.

It may not be practical nor feasible if fills cannot be placed above existing utilities or if significant utility relocations are required (current locations and requirements are unknown). Potential fill area is limited to the western end of the tunnel where existing abutments can sustain earth pressure loads. Fill cannot be placed adjacent to building foundations near the center and east portions of the tunnel.

The estimated cost of this alternative (including design and construction administration) is approximately \$1.8 million. However, costs could be significantly higher when more information is obtained on utilities and related constraints.

Alternative 3 – Tunnel Removal and Roadway Reconstruction

This alternative assumes the site near the tunnel is transformed and re-developed. The tunnel is completely removed and replaced with a new roadway connection to downtown. Trail connections are established elsewhere. NH Route 120 (Hanover Street) is assumed to be lowered with the removal of the highway bridge over the tunnel, reconstructing the retaining wall at the west side of the road, and constructing a new bridge superstructure (beams and deck) at the bridge crossing the Mascoma River. Most of the buildings adjacent to the former tunnel would be demolished and rebuilt.

The estimated cost associated with the structural items only for this alternative is nearly \$5 million. Total costs that include roadway, site/civil, utilities, and right-of-way would be much greater.



Figure 3.1 – Alternative 3 Tunnel Removal and Re-development Concept

Tunnel Repair Options

Option 1 – Temporary Shielding Structure

This option would allow the trail to be reopened by constructing a temporary shielding structure and canopy along the tunnel to protect pedestrians and bicyclists from the falling concrete of the deteriorated deck beams. The parking area at the west end of the tunnel would remain closed until the deck beams are replaced. The plaza area at the east end may require signs that prohibit congregational loadings until the deck beams are replaced.

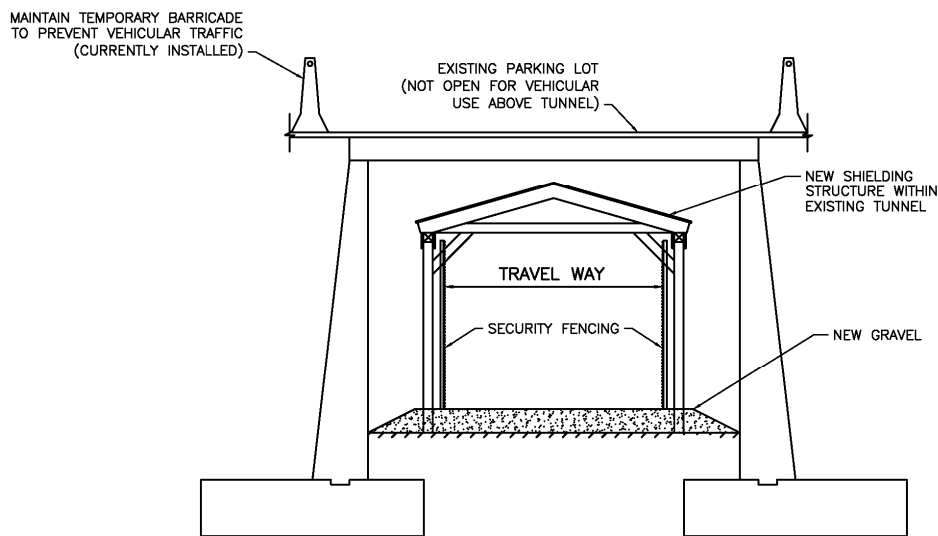


Figure 3.2 – Temporary Shielding Structure Concept

The temporary shielding structure includes a gravel surface, security fencing, and structural timber and sheathing to provide a 12 foot wide travel way along the tunnel. Minor repairs to the plaza safety railing at the east end of the tunnel are also included. (See Figure 3.2).

The estimated cost of this option (including design and construction administration) is approximately \$200,000.

Option 2 – Partial Deck Replacement & Temporary Shielding Structure

This option assumes the deck beams at the western end of the tunnel are replaced to restore parking and vehicular access. The trail would be reopened once the beams are replaced and a temporary shielding structure is installed at the east end (similar to Option 1). The plaza area at the east end may require signs that prohibit congregational loadings until the deck beams at that end are replaced.

The estimated cost of this option (including design and construction administration) is approximately \$900,000.

Recommendations

Selected Alternative

Alternatives for the tunnel configuration were presented and discussed with city officials and the public during several outreach meetings associated with the Downtown Lebanon Visioning Study. The consensus was to advance the project with Alternative 1A – Deck Replacement with Opening. This alternative provides connectivity for the Mascoma River Greenway and allows areas for vehicular or pedestrian use above the tunnel and portions of the mall plaza. The estimated cost of this alternative is two million dollars.

The selected alternative includes the following:

- Replace the precast deck beams with a new cast-in-place concrete slab.
- Rehabilitate the upper abutment walls.
- Reconstruct the pier columns and pier caps.
- Construct a new gravel trail within the tunnel with a 12' wide paved surface.
- Install safety lighting along the inside of the tunnel.
- Construct a new wearing surface on the top of the deck.

If redevelopment and other improvements on the top side of the tunnel are not implemented immediately, it may be prudent to not construct the opening in the tunnel until such redevelopment occurs. This will make snow removal and other maintenance activities easier.

Implementation Strategy and Considerations

Replacing the existing tunnel deck slabs and rehabilitating the existing substructure is a significant project. To ensure the most cost-effective design is constructed, more information, research, and coordination is needed with abutters, utilities, and other stake-holders. This takes time. A well-designed plan allows for improved

construction estimates, optimization of materials and labor, and reduced risk for change-orders associated with unknowns and/or differing site conditions. An interim maintenance project, similar to Option 1 in Appendix A2, will allow the trail to be opened much sooner while providing a longer timeframe to engineer the permanent replacement project and secure the funds, rights, and agreements that may be needed. Carefully developing the tunnel project and optimizing the design could reduce project costs to offset the money spent on a temporary shielding structure.

A temporary shielding structure could be constructed using a design-build method or a design-bid-build method. If minimizing cost is most important, the design-build approach may be the best option. However, if the City wants more input on materials, configuration, or construction, a traditional design-bid-build approach is recommended.

Information Gathering

During the development of this report, the information available on the tunnel was limited to existing design plans, a deck inspection report by HTA, and a report by Sabourn & Tower regarding property limits in the area of the tunnel. Additional information and coordination is needed for preparing and advancing the final design of the tunnel replacement project. Some of this information and coordination includes:

- Meeting with abutters to discuss project scope, property boundaries, and potential conflicts.
 - o Portion of the building at the east end of the tunnel is supported on a deck beam. This portion of the building will likely need to be removed to complete the work.
 - o There is a triangular slab structure supported on steel columns and beams at the north east corner of the tunnel that is not owned by the City and it is not in the record design plans. (See Figure 4.1)
 - o There are numerous mechanical/electrical components, fenced areas, drain pipes, and other appurtenances secured to or on top of the substructures and deck slabs. These will be affected by the project and some may not have the necessary rights established. (See Figure 4.2).



Figure 4.1 – Separate deck slab section

- o Security concerns and access requirements to the lower building levels should be considered in the design. This should be discussed with each abutter. (See Figure 4.3).



Figure 4.2 – Equipment, utilities, and other items



Figure 4.3 –Window near east end of tunnel

- Prepare a survey base plan along the parking lot and plaza in the vicinity of the tunnel and the features and topography in and along the tunnel. The base plan should identify utilities (exposed and underground), building features/opening, drainage, locations of structures, mechanical/electrical conduits, material/surface features, and other related elements.
- Identify and locate all the utilities/owners/services within and adjacent to the project and initiate coordination as required.
- Conduct a hazardous material survey to identify mitigation measures or design/construction constraints to avoid disturbance and remediation costs if possible.
- Discuss the proposed tunnel plan with NHDOT. Based on the function of the trail corridor (needing a minimum opening that is only 12'x12') this may allow the City to realize future cost savings when the Hanover Street Bridge (NH Route 120) is replaced in the next ten years.

Next Steps

Before allocating and spending funds on interim repairs or final design, we recommend that the City take action on the items described under “Information Gathering”.

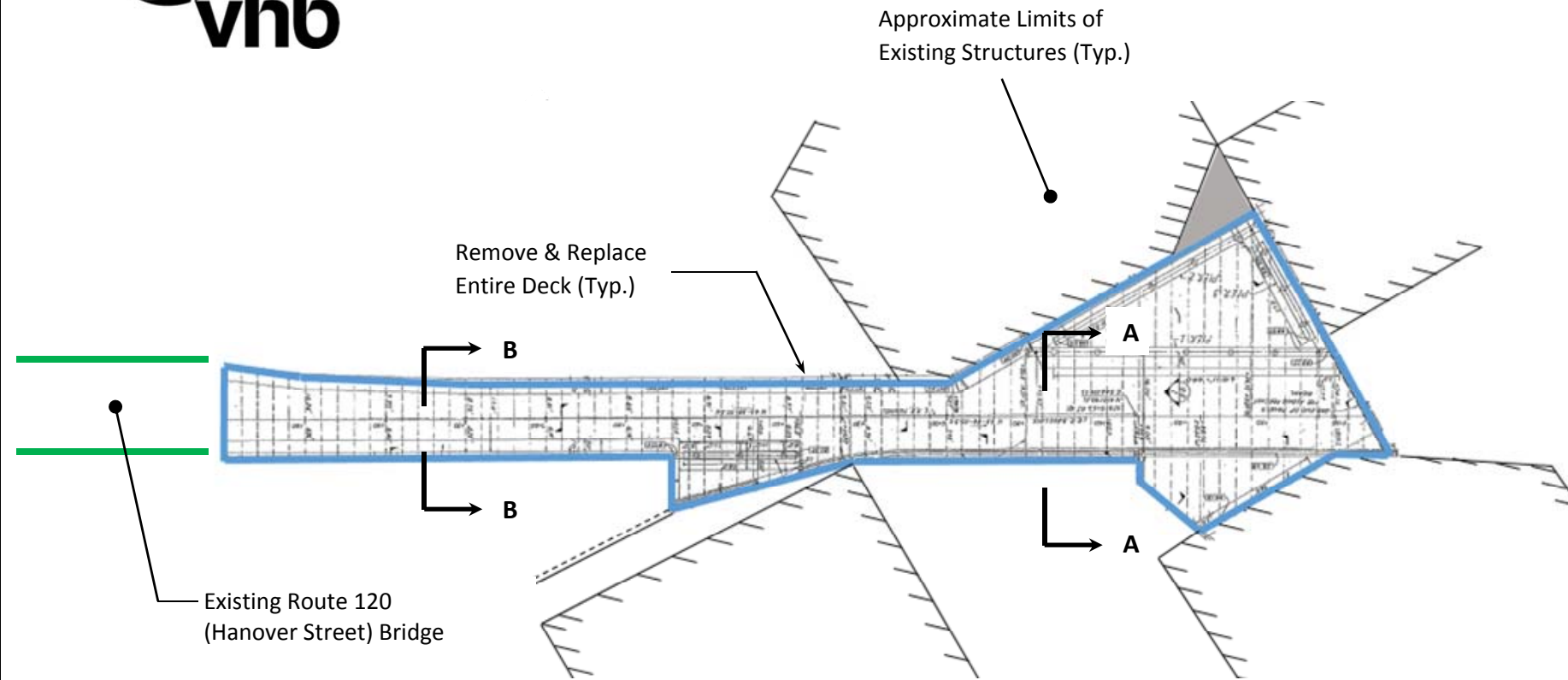
If there are significant issues regarding utilities, abutters, and rights, it may take a couple of years before the tunnel reconstruction can be completed. During this time, funds can be raised and/or allocated for the work. If it is important to open the trail as soon as possible, the City could consider construction of a temporary shielding structure. The parking lot area above the tunnel would remain closed until the concrete deck beams are replaced.



Engineering Report Appendix A1



Tunnel Alternative #1

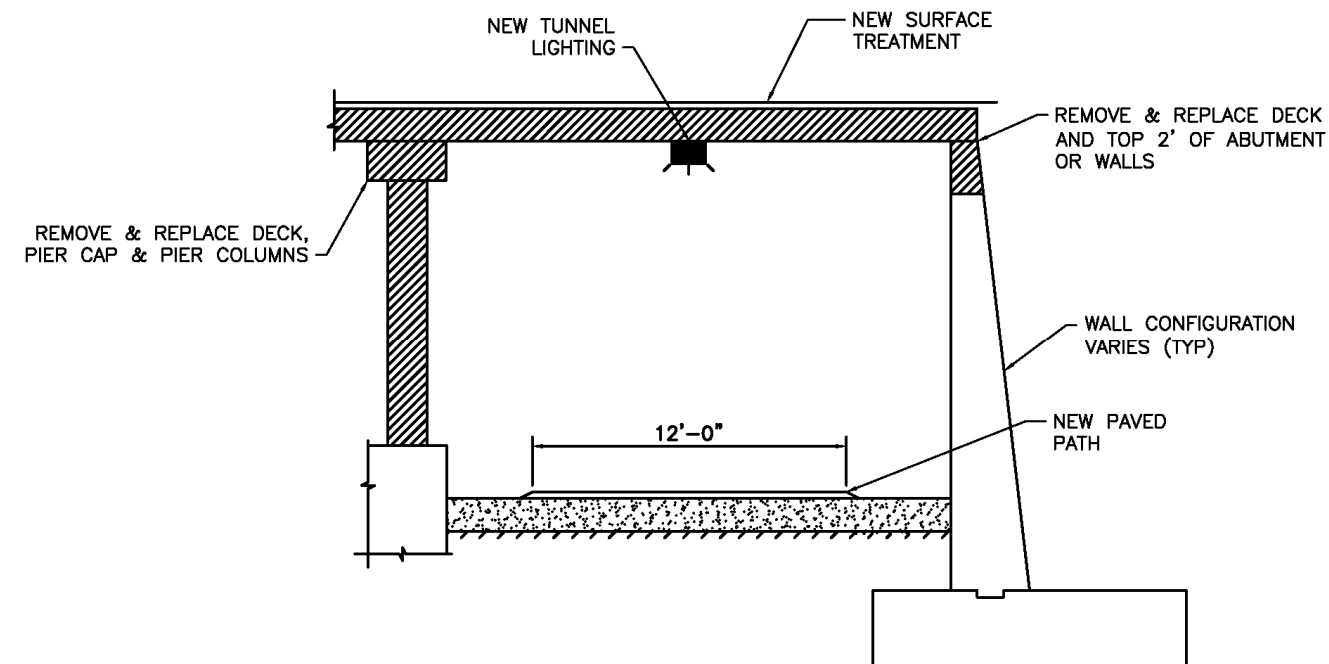


TUNNEL PLAN
(NTS)

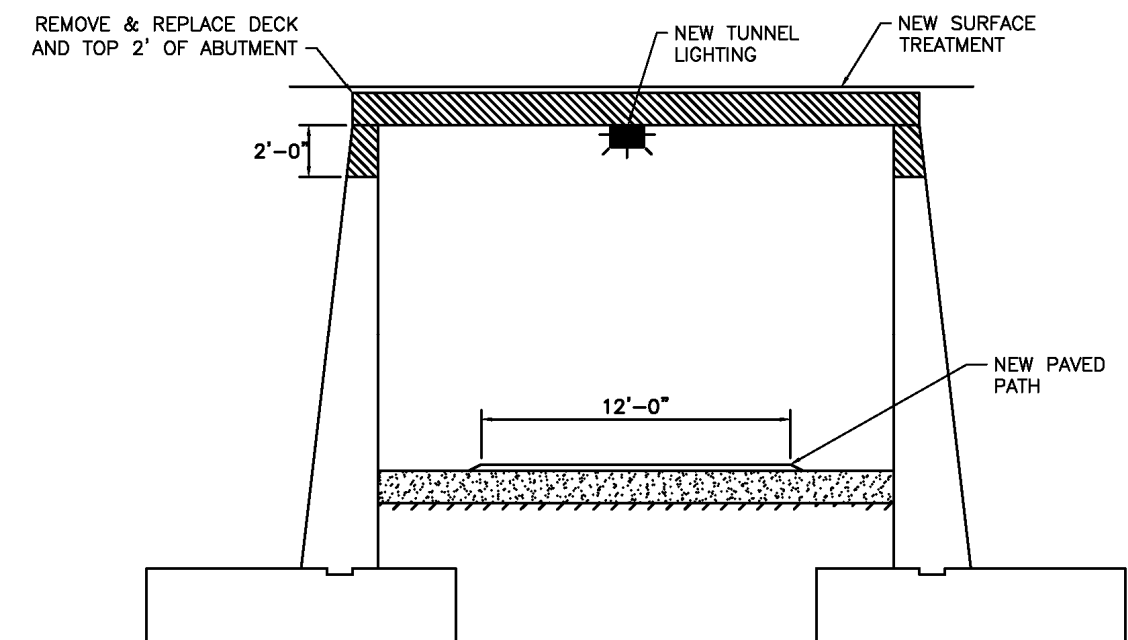
Complete Deck Replacement

- Maintains tunnel access, parking lot, and plaza
- New lighting
- New surface treatment and trail bed
- New cast-in-place deck and support columns

Estimated Cost: \$2.0 Million



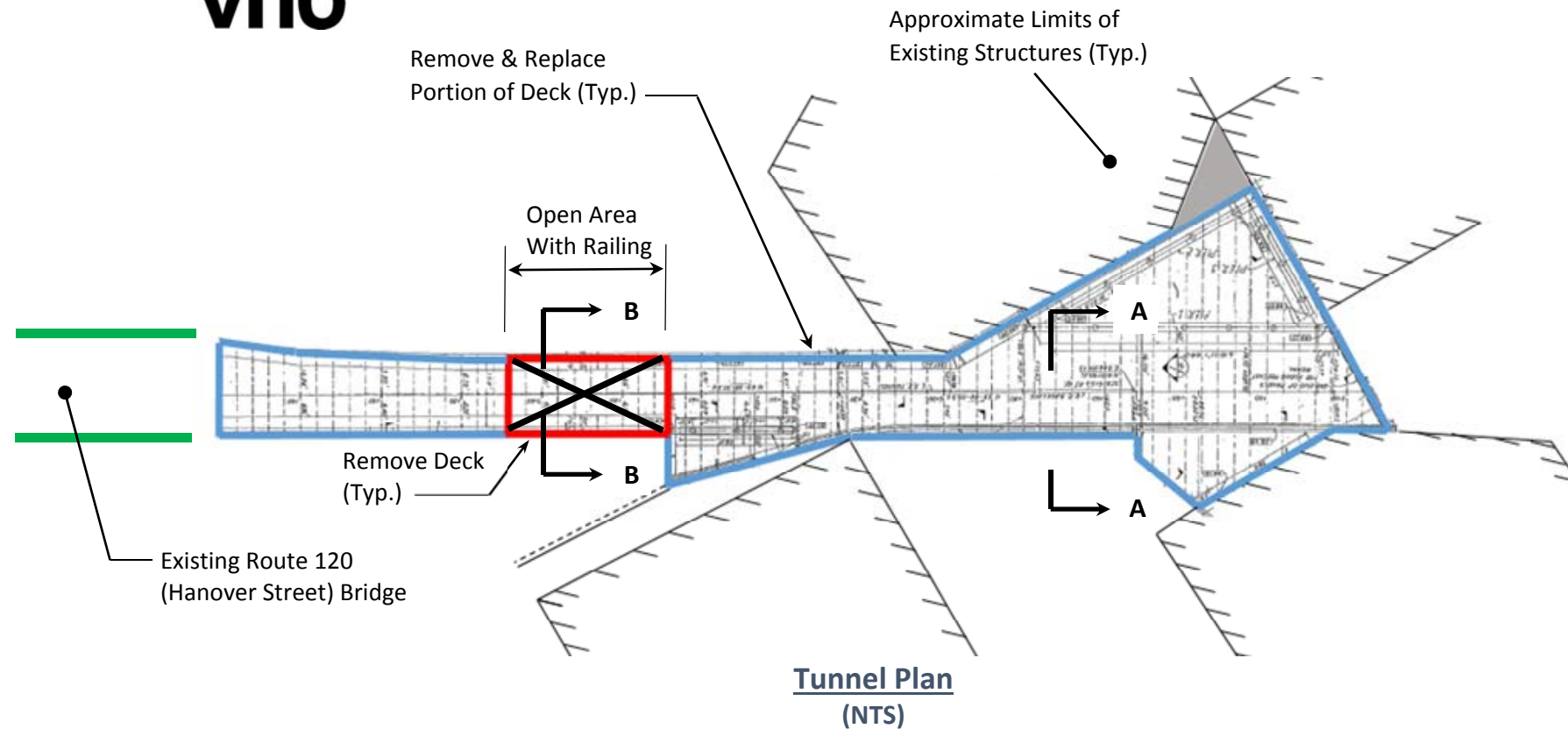
SECTION A-A
(NTS)



SECTION B-B
(NTS)



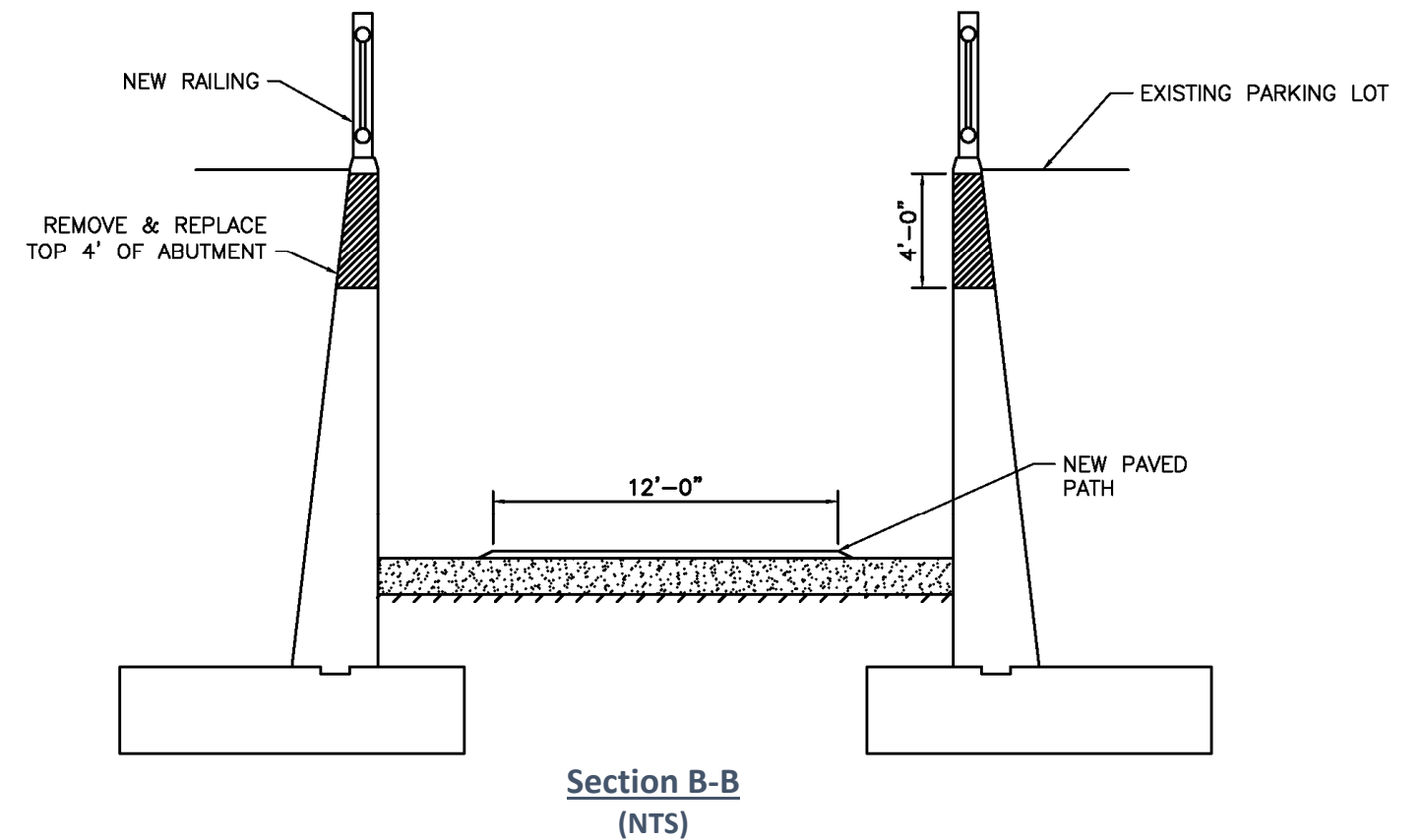
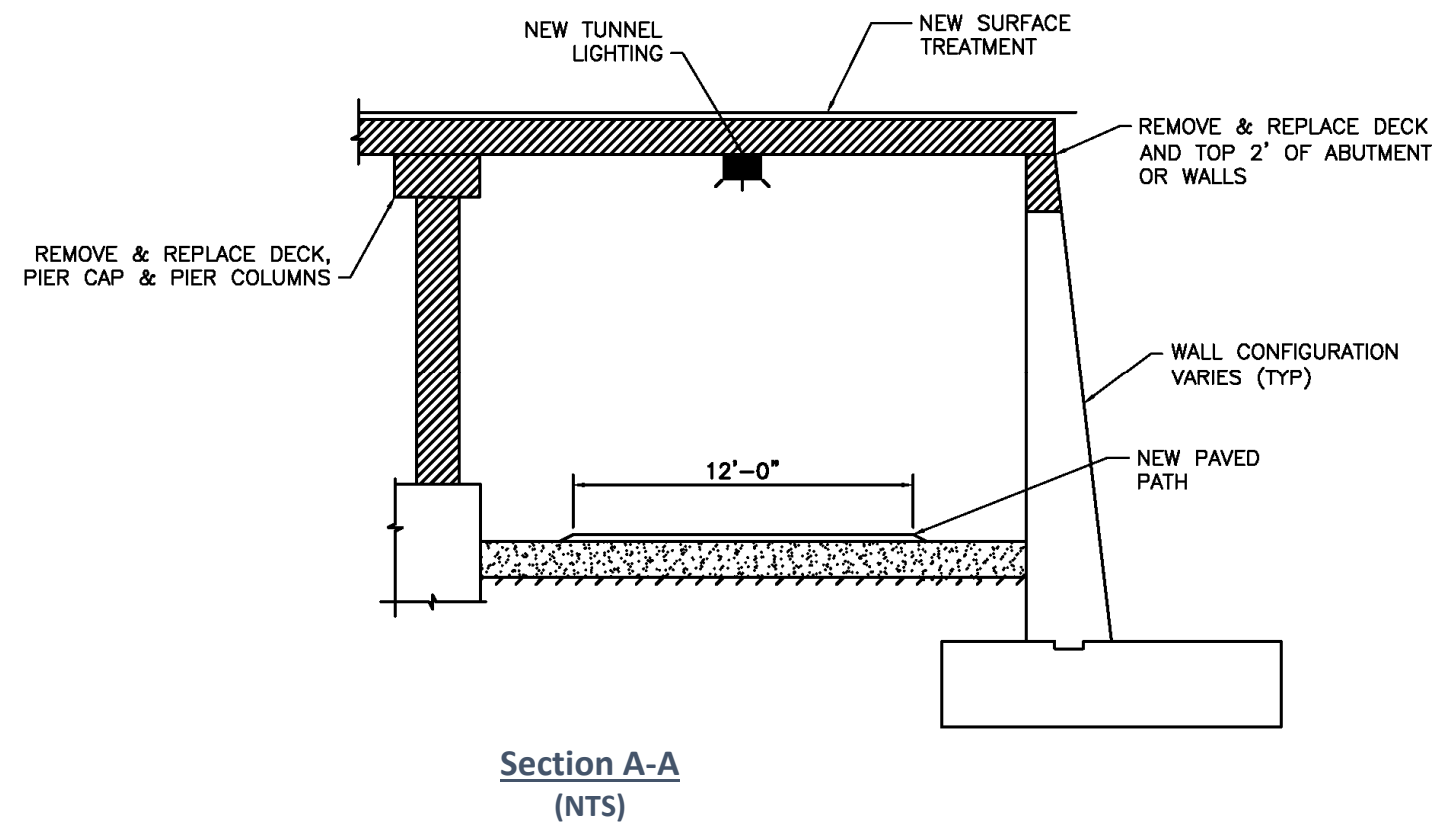
Tunnel Alternative #1A

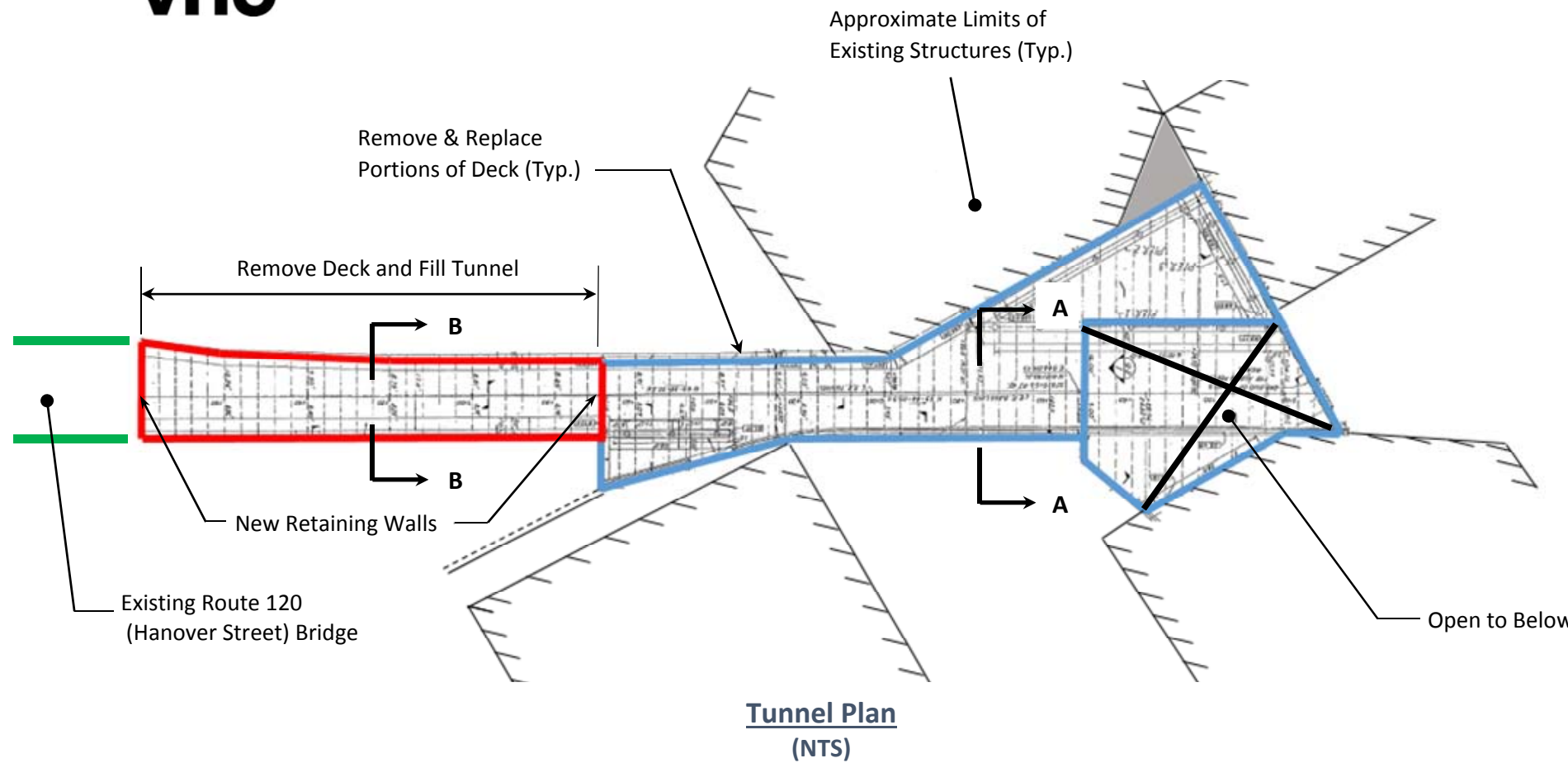


Deck Replacement with Opening

- Maintains tunnel access and plaza
- Replaces parking with an opening surrounded by railing
- New lighting
- New surface treatment and trail bed
- New cast-in-place deck and support columns

Estimated Cost: \$2.0 Million

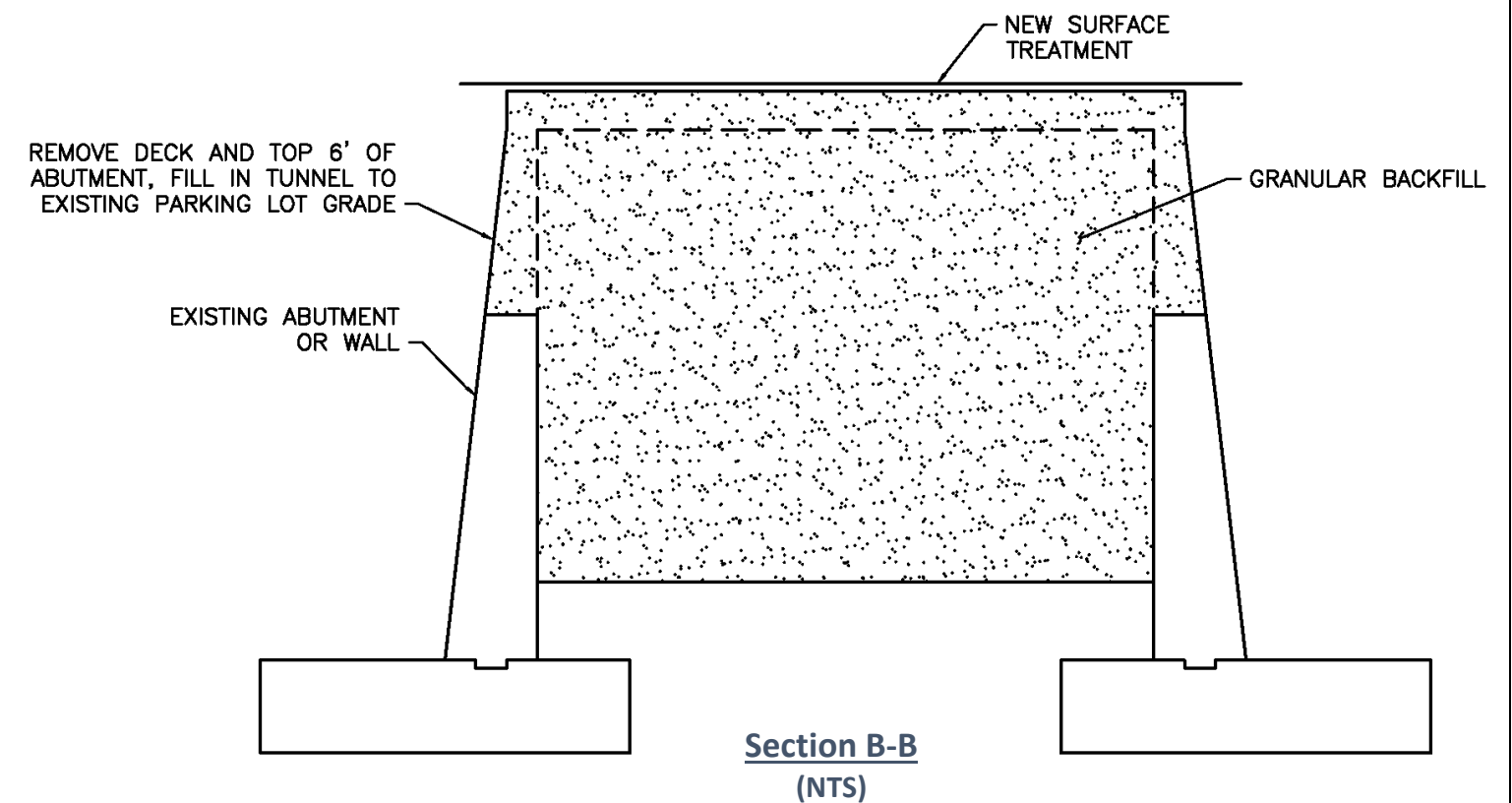
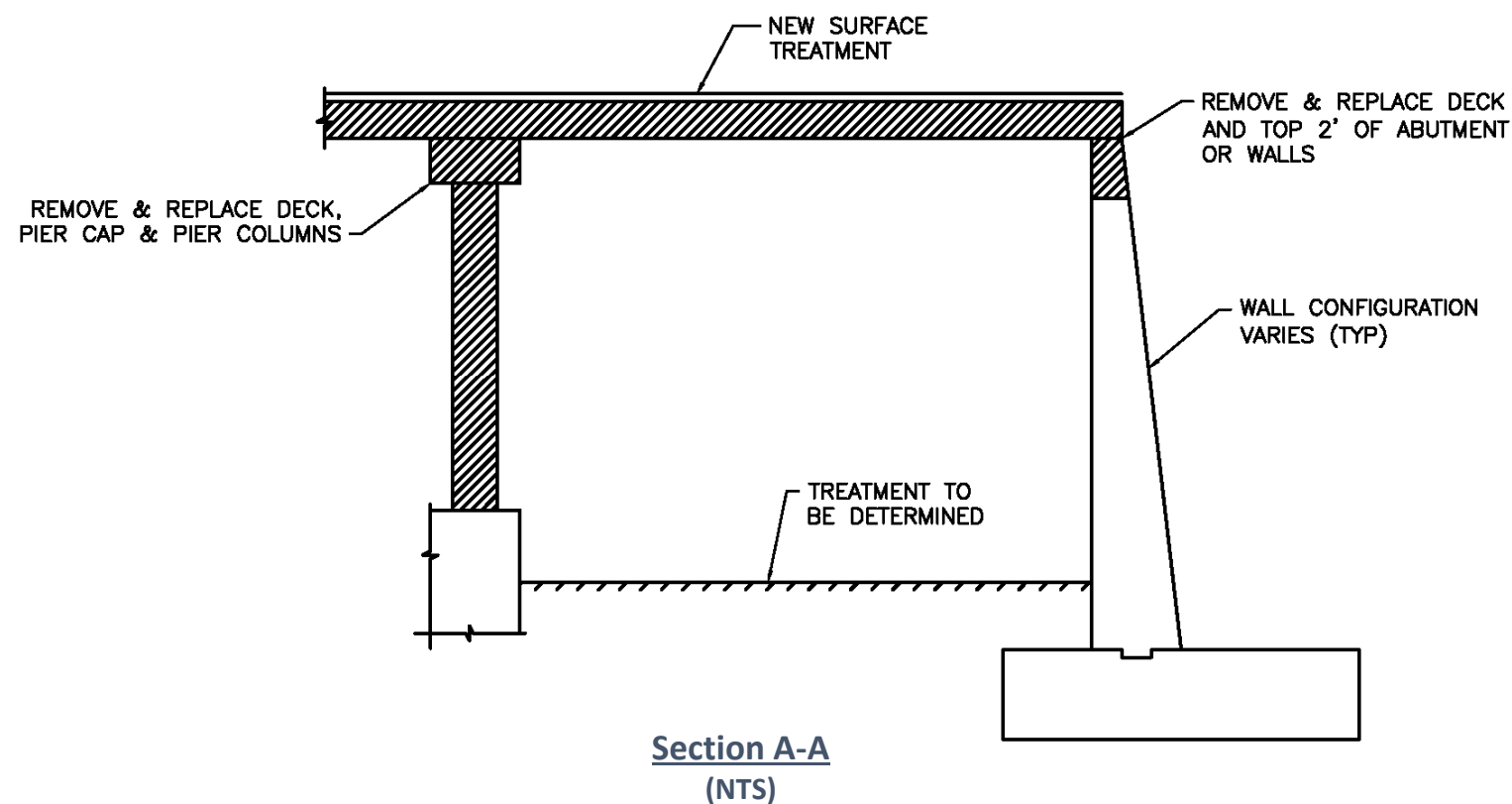


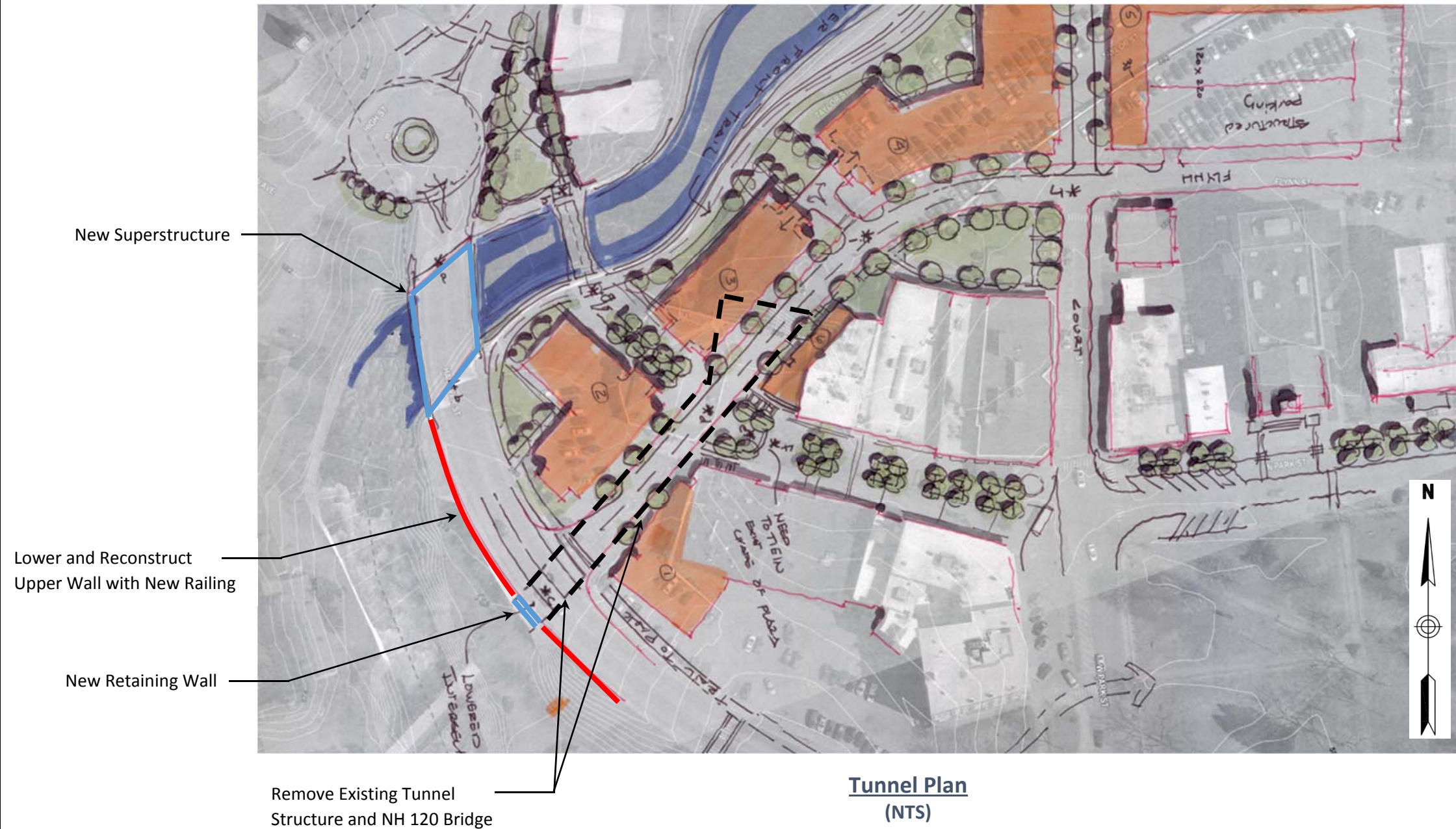


Deck Replacement with Partial Fill and Opening

- No thru tunnel access for trail
- Requires reconfiguration of stairs and building entrance
- Maintains parking area and portions of plaza
- Replaces portions of plaza with opening and new railings
- Potentially remove adjacent NH 120 bridge and fill in (programmed for replacement in 2023)
- May require relocation or sleeves for buried fiber optic

Estimated Cost: \$1.8 Million





Tunnel Removal and Roadway Reconstruction

- Tunnel replaced with new roadway
- Removes existing bridge carrying Route 120 (Hanover street) over the pedestrian path/abandoned railroad
- New superstructure carrying Hanover street over the Mascoma river
- Reconstruct upper retaining wall along Hanover street

Estimated Cost: \$4.9 Million

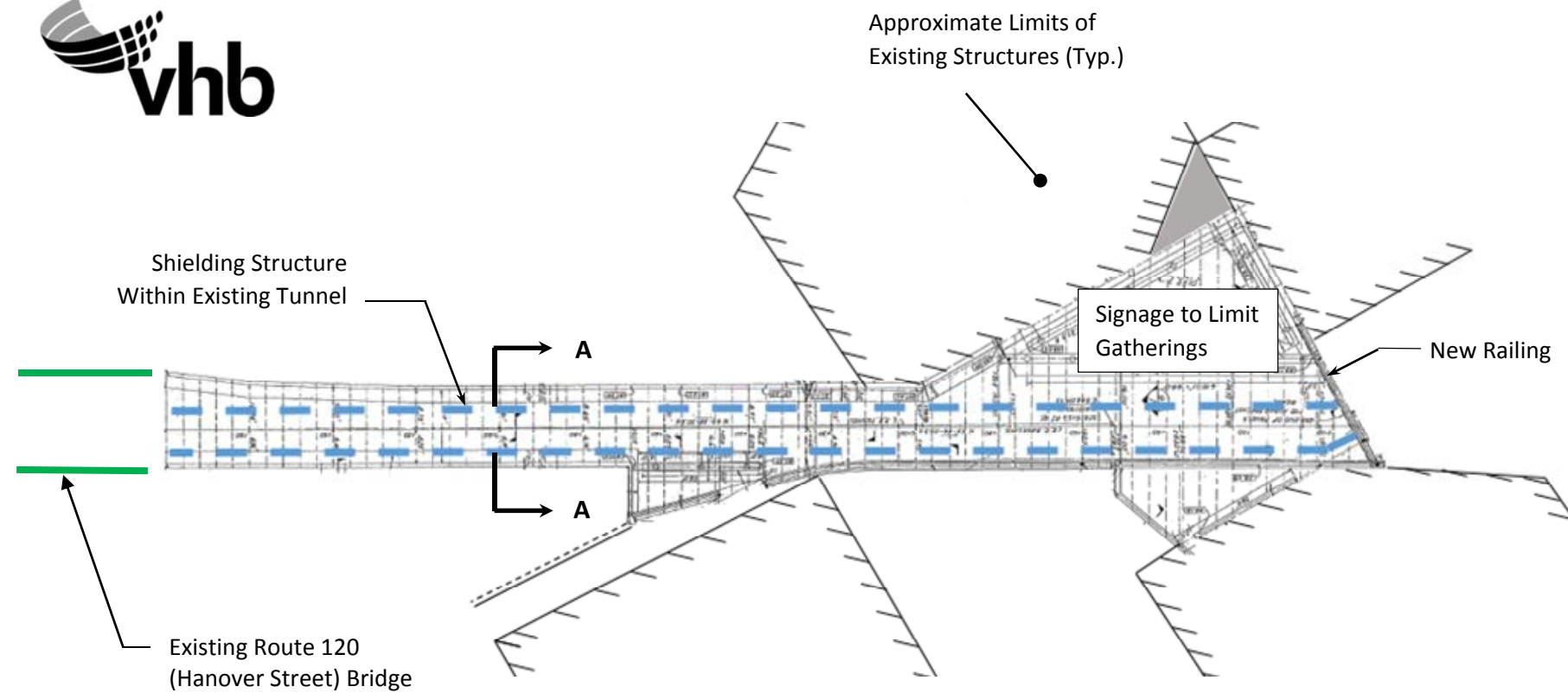
* Cost includes structural items only as noted above. Other costs for pedestrian bridge, roadway and site/civil are not included.



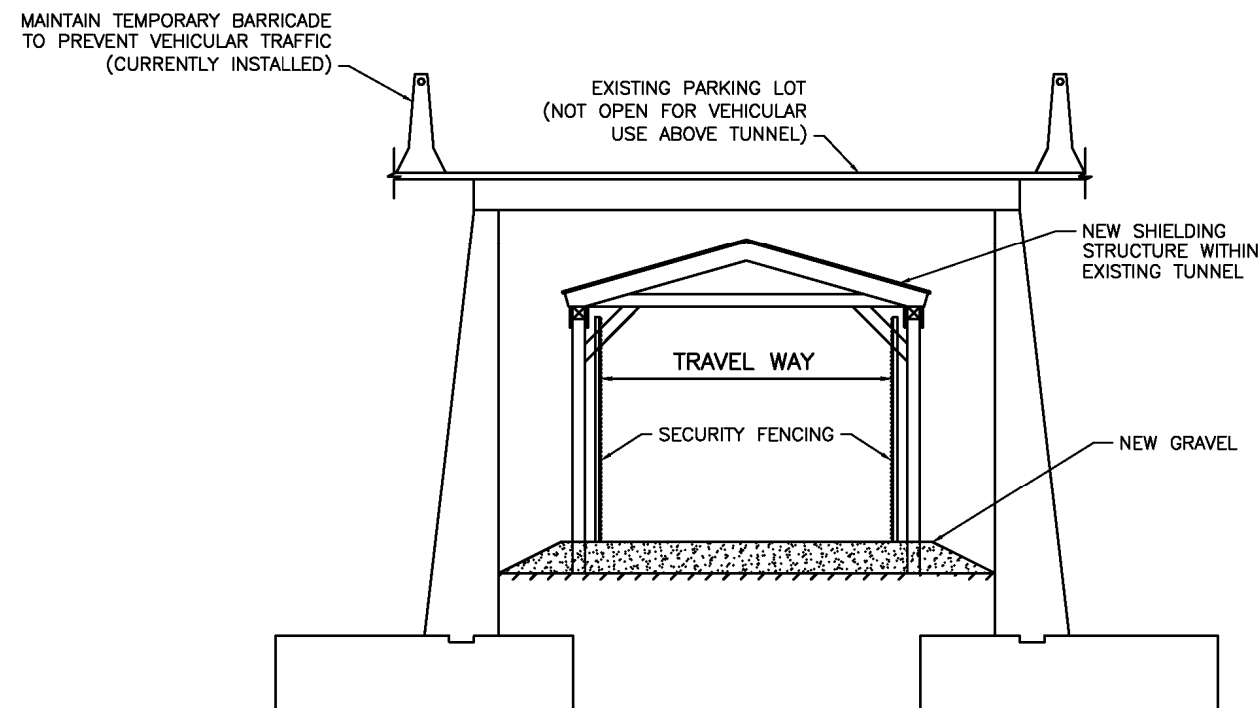
Engineering Report Appendix A2



Interim Repair – Option 1



Tunnel Plan
(NTS)

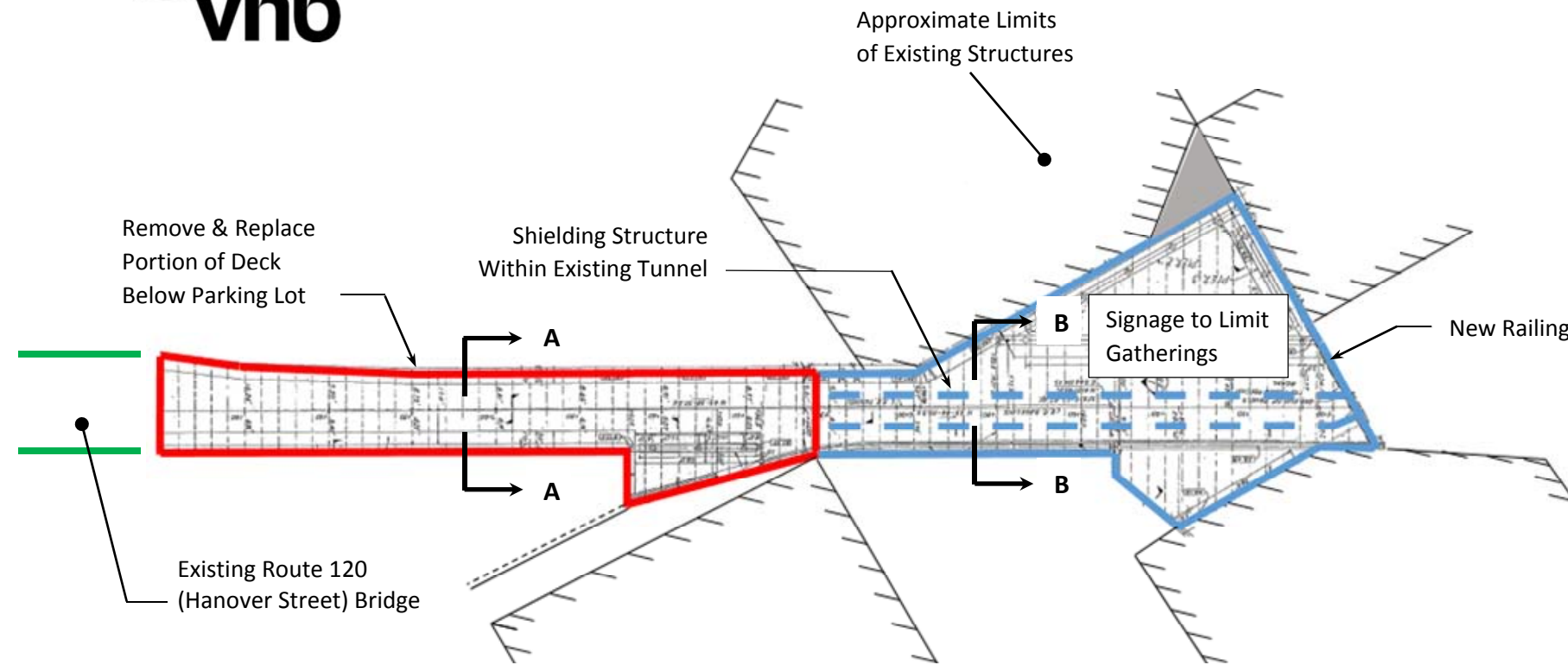


Section A-A
(NTS)

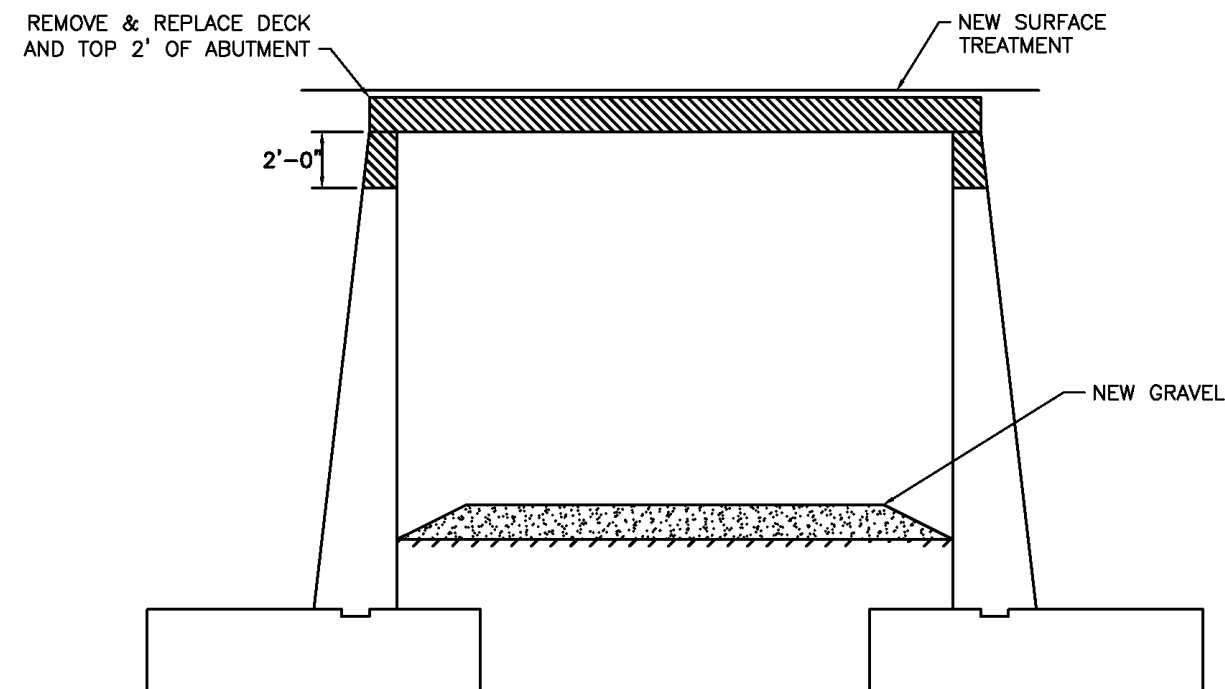
Temporary Structure Inside of Tunnel

- Provides confined tunnel access for pedestrian use.
- Prohibits vehicular parking above tunnel.
- Includes signage to limit gatherings on plaza.
- New railing at end of plaza next to stairs.

Estimated Cost: \$200,000



Tunnel Plan
(NTS)

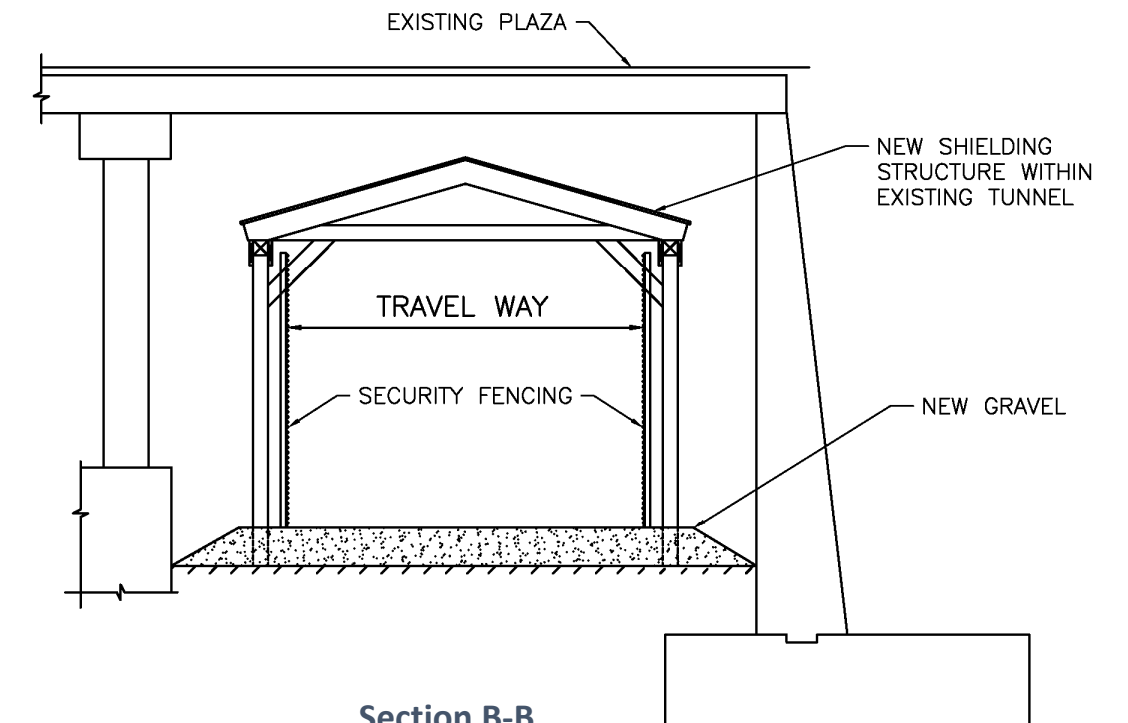


Section A-A
(NTS)

Deck Replacement Below Parking Lot

- Provides parking lot, plaza, and confined tunnel access.
- Includes signage to limit gatherings on plaza.
- Includes a shielding structure below the plaza area within existing tunnel.
- New railings at end of plaza next to stairs.

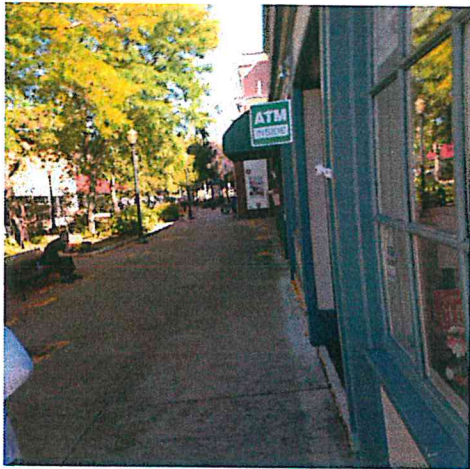
Estimated Cost: \$900,000



Section B-B
(NTS)

Appendix

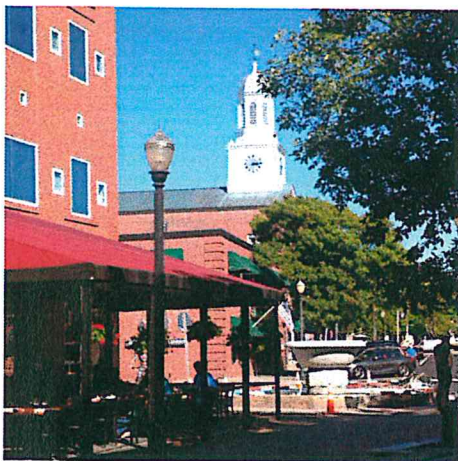
B Market Analysis Memorandum



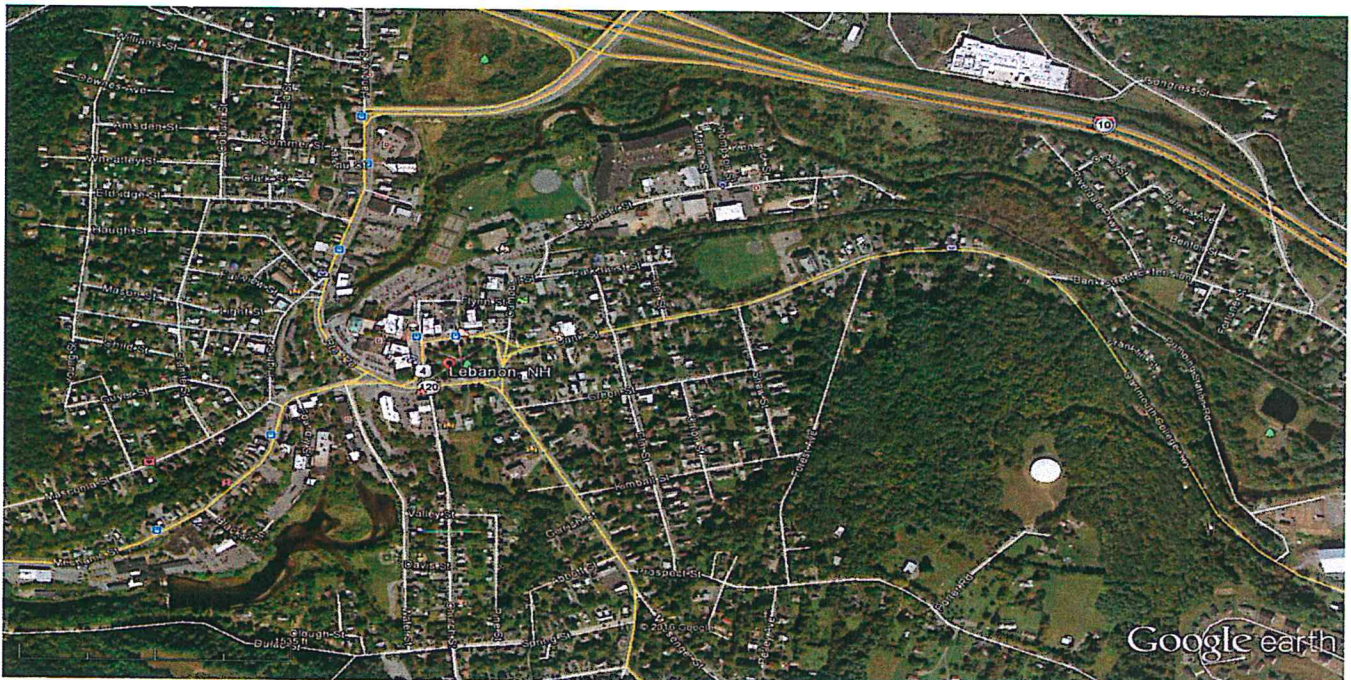
Downtown Lebanon Market Opportunities

March 2016

***Prepared for: City of Lebanon
Under Subcontract to VHB***



***Applied Economic Research
Laconia, New Hampshire***



Conclusions

This report estimates downtown Lebanon's potentially supportable space in new and substantially renovated investment over the 2015-2030 period. The analysis examines the regional economic trends, the current inventory of space in downtown, and the absorption of new non-residential and multi-family space in Lebanon and estimates of downtown's potential capture of that projected new development activity in the City.

Downtown's potentials are:

Downtown Lebanon Market Potential, 2015-2030		
	Low Range	High Range
Multi Family Units	180	270
Multi Family Square Feet	216,000	324,000
Office Square Feet	22,000	45,000
Retail Square Feet	25,000	50,000

In addition to these market potentials, there is the possibility that downtown will accommodate new institutional and government space.

This report is part of a multi-faceted planning study of downtown, examining downtown's physical and infrastructure opportunities and needs. Downtown will have to fine tune its infrastructure and design considerations to achieve these opportunities.

Downtown Lebanon Market Opportunities

The following paragraphs set forth an analysis of downtown Lebanon market opportunities. The analysis was prepared on behalf of the City of Lebanon by Applied Economic Research, under contract to Vanasse Hangen Brustlin, overall consultants on the downtown Lebanon planning process.

The Market Setting: Employment and Labor Force

The market setting is the New Hampshire portion of the Lebanon labor market, as defined by New Hampshire Employment Security. The market consists of Lebanon plus 12 surrounding communities. Labor markets are defined based on commuting patterns.

Employment trends (jobs within the area) reflect a pattern of growth of 918 jobs between 2004 and 2007, with a modest loss of 94 jobs between 2007 and 2015, because of the national recession. In both periods, the majority of the employment gains have been in the Service sectors, including health care and (although specific for this sector data is suppressed in this data series) educational services.

More than growth, per se, the regional job base in recent years has experienced shifts in employment—with gains in the health care setting (Dartmouth-Hitchcock Medical Center, and Alice Peck Day) offsetting losses in manufacturing, construction and trade.

Employment Trends Lebanon NH Labor Market Area					
	2004 Average Annual Employment	2007 Average Annual Employment	2015 Second Quarter Average Employment	Change 2004- 2007	Change 2007- 2015
Total, Private plus Government	30,711	31,629	31,535	918	-94
Total Private	28,230	29,137	29,129	907	-8
Goods Producing	4,186	4,212	3,474	26	-738
Construction	993	895	494	-98	-401
Manufacturing	3,071	3,181	2,844	110	-337
Service Providing	24,044	24,925	25,655	881	730
Wholesale Trade	679	735	342	56	-393
Retail Trade	3,856	3,898	3,449	42	-449
Transportation and Warehousing	343	260	312	-83	52
Information	1,037	1,054	462	17	-592
Finance and Insurance	496	526	512	30	-14
Real Estate and Rental and Leasing	248	205	190	-43	-15
Professional and Technical Services	1,092	1,189	1,327	97	138
Administrative and Waste Services	491	588	382	97	-206
Educational Services	n	n	n		n
Health Care and Social Assistance	7,107	7,697	8,944	590	1,247
Arts, Entertainment, and Recreation	325	335	380	10	45
Accommodation and Food Services	1,906	1,899	2,233	-7	334
Total Government	2,481	2,492	2,406	11	-86
Federal Government	376	355	319	-21	-36
State Government	152	157	99	5	-58
Local Government	1,954	1,979	1,988	25	9

Includes Canaan, Cornish, Enfield, Grafton, Grantham, Hanover, Lebanon, Lyme, Orange, Orford, Piermont, Plainfield and Springfield

Lebanon is the major employment center within the Labor Market Area, accounting for over half of the Labor Market Area's total jobs:

Annual Average Covered Employment	2004	2014
Goods Producing Industries		
Average Employment	2,353	1,773
Average Weekly Wage	\$ 858	\$1,314
Service Providing Industries		
Average Employment	14,805	15,656
Average Weekly Wage	\$ 831	\$1,203
Total Private Industry		
Average Employment	17,158	17,429
Average Weekly Wage	\$ 835	\$1,214
Government (Federal, State, and Local)		
Average Employment	898	808
Average Weekly Wage	\$ 691	\$ 974
Total, Private Industry plus Government		
Average Employment	18,055	18,237
Average Weekly Wage	\$ 828	\$1,203

Adjacent Hanover accounts for an additional 9,800 jobs meaning that on a combined basis Hanover and Lebanon represent 90% of the region's job base.

According to NH Employment Security major employers in Lebanon and the number of their employees are:

Dartmouth Hitchcock Medical Center/Hitchcock Clinic	Health care services	6,904
Alice Peck Day/Lifecare Center	Health care services	607
Hypertherm	Manufacturing	569
FujiFilm	Technology	390
Timkin	Ball & roller bearings	377

Major employers in adjacent Hanover are:

Dartmouth College	Education	3,200
Hypertherm	Plasma arch cutting	1,120
Dartmouth Printing Co.	Printing services	217
Town of Hanover	Municipal services	140
Hanover Inn	Lodging	112
Creare	Research & development services	83
Trumbull Nelson Construction Co.	Construction	75

With a major concentration of jobs in the health care and education sectors the regional economy is somewhat insulated from the major employment volatility driven by business cycles—as reflected in its minor loss of jobs in the recent recession, in contrast to significant losses at the State and national levels.

Another aspect of the regional economy is that its structure supports above average wages. In the second quarter of 2015, the average weekly wage in the region was \$1,245, nearly 30% higher than the state-wide average of \$966.

The region typically supports a low unemployment rate—under 3% in recent months, signaling full employment and possibly a labor shortage:

	November 2015	October 2015	November 2014
New Hampshire			
Labor Force	735,800	736,580	739,860
Employment	712,550	714,520	711,090
Unemployment	23,250	22,060	28,770
Rate	3.2%	3.0%	3.9%
Lebanon NH-VT MicroNECTA, NH Portion			
Labor Force	24,850	24,770	24,930
Employment	24,220	24,160	24,220
Unemployment	630	610	710
Rate	2.5%	2.5%	2.8%

This is consistent with a long-term pattern wherein the Lebanon Labor Market Area has consistently had the lowest unemployment rate in the State.

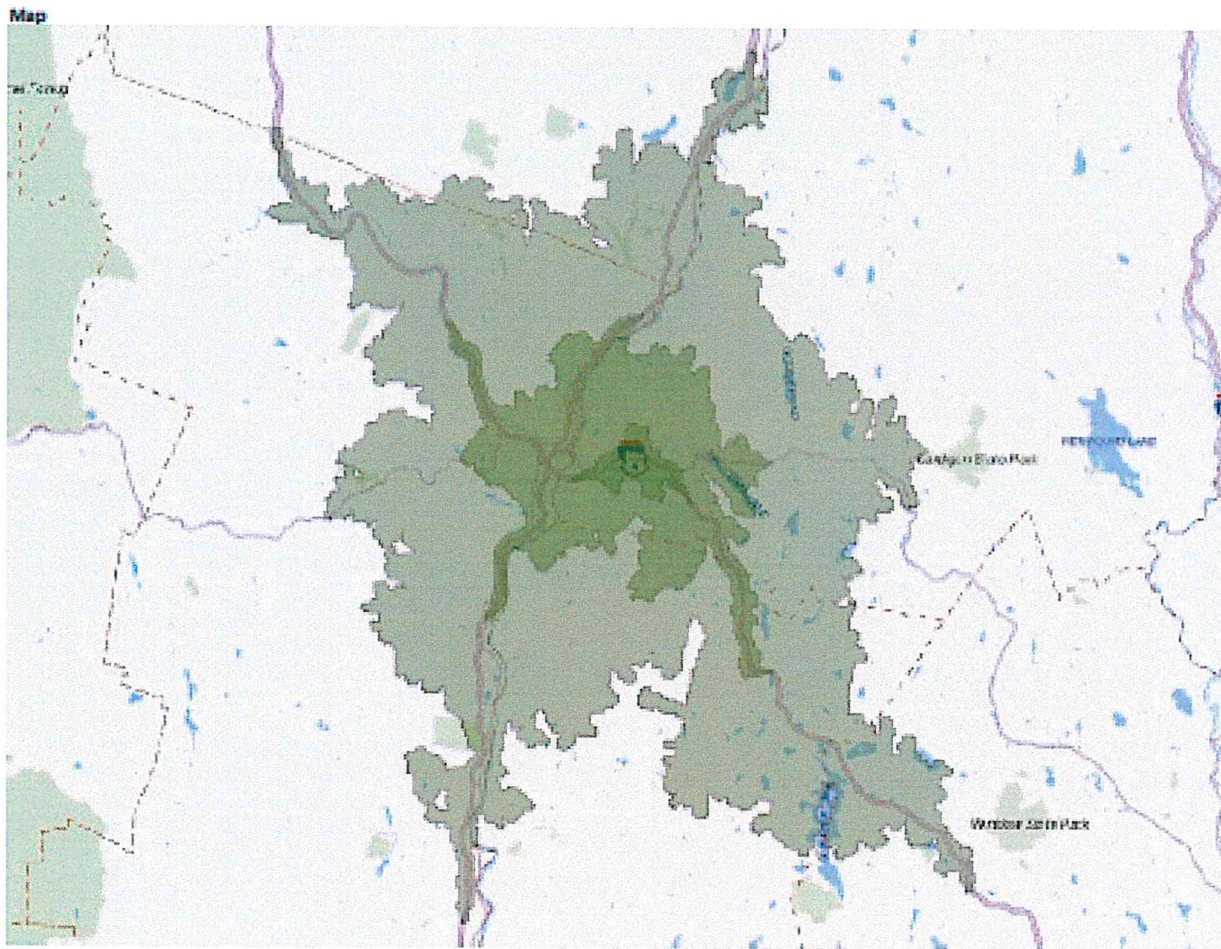
The region experiences net in-commuting, meaning there are more jobs than workers in the market area. Employers in the region host a total of 31,500 jobs, whereas the resident employment totals 24,200. High housing costs force some employees to live outside of the region, including nearby Vermont communities, while the strong regional transportation system, including Interstates 89 and 91, enable relatively easy commuting from outside of the region.

The Market Setting: Population and Demographic Characteristics

Lebanon exerts significant pull on a broad region by virtue of its role as an employment and retail center (along with Hanover) and the excellent road network providing Interstate access in all important directions. In light of this, AER sets forth demographic trends for:

- Downtown Lebanon and its immediate environs—defined as a one mile radius from City Hall.
- The City of Lebanon
- The Regional Context, including 5, 15 and 30 minute drive times

The data source is the Nielson demographic service. Copies of detailed demographics for these identified areas are in the Technical Appendix to this report. The 5, 10 and 30 mile drive times are mapped as follows:



The broad definition of the market area extends northerly along I-91 to Woodsville, southerly along I-91 to Claremont/Springfield, southeasterly along I-89 to Sutton, northwesterly along I-89 to Randolph, Vermont and easterly along Route 4 to Canaan.

Population and household trends are depicted in the Table, below.

Population and Households: Lebanon Market Setting						
	2000	2010	2015	2020	Change 2000-10	Change 2010-20
Population						
Downtown: 1 Mile Radius	3,184	3,084	3,000	2,936	(100)	(148)
Lebanon City	12,565	13,151	13,343	13,535	586	384
5 Minute Drive from City Hall	6,971	6,806	6,750	6,720	(165)	(86)
15 Minute Drive From City Hall	36,549	37,449	37,415	37,489	900	40
30 Minute Drive From City Hall	78,130	81,594	81,146	81,238	3,464	(356)
Households						
Downtown: 1 Mile Radius	1,487	1,553	1,531	1,512	66	(41)
Lebanon City	3,177	3,269	3,360	3,430	92	161
5 Minute Drive from City Hall	3,149	3,277	3,309	3,328	128	51
15 Minute Drive From City Hall	14,032	15,146	15,315	15,437	1,114	291
30 Minute Drive From City Hall	30,823	33,459	33,762	34,000	2,636	541
<i>Source: The Nielson Company</i>						

What is probably most striking about the figures is that while Lebanon is a relatively small community, with a population of just over 13,300, its regions is a significant market setting. There are 37,400 people living within 15 minutes of downtown Lebanon and 81,150 living within a 30 minute drive, despite the rural nature of most surrounding communities. The market area has surprisingly high population counts because of the excellent road network emanating from Lebanon. These population levels support the job base in the Hanover-Lebanon area and explain the concentration of retail space (along with the lack of a NH sales tax) along Route 12A and 120 heading into Hanover.

The table shows modest population losses within the 1 mile and 5 minute drive radius of City Hall, reflecting declining household size, not fully offset by an increase in the number of households (occupied housing units). The figures reveal that most of the population growth has occurred in the 15 and 30 minute drive times—probably reflecting more available land and lower housing prices in these more rural settings.

The number of households shows more growth, than population, per se, as new housing units are brought into the inventory. Again, however, the bulk of the growth has been in the more rural 15 and 30 minute drive time settings.

The projections prepared by the Nielson Company indicate that slow growth or some population losses are anticipated in both population and households during the current decade. This reflects the recession that has stymied growth in the 2010-16 period and is consistent with other sources, including the NH Office of Energy and Planning population projections, although the details vary. The State's projections call for Lebanon's population to drop from 13,151 in 2010 to 12,952 in 2020. Similarly Hanover's population is expected to drop from 11,260 to 10,990 during that same period. Most observers do anticipate that when the current decade ends, most New Hampshire and Vermont communities will register significantly lower growth figures than

occurred in the 2000-10 decade and that some communities will experience population losses because of slower economic/job growth. In any event, the region is best characterized as having a high population and household base and that base is expected to grow slowly in the near-term future.

Population characteristics indicate that the region is somewhat younger than New Hampshire, owing to the presence of Dartmouth College and DHMC, a teaching hospital that attracts young staff.

Median incomes within the 30 minute drive radius are higher than the state average and housing values are higher than the State-wide average.¹ It is notable that incomes mirror those of the State. State averages tend to be dominated by southern and seacoast communities. As such, the income characteristics of this market area are distinct and superior to the general characteristics of central and northern New Hampshire and Vermont. This is owing to the region's employment profile driven by health care and higher education facilities, which tend to support higher wages and therefore higher housing costs due to competitive demand pressures.

Population and Housing Characteristics, 2015			
Median Age: 2015		Renter Occupied Housing Units: 2015	
Downtown: 1 Mile Radius	40.3	Downtown: 1 Mile Radius	924
Lebanon City	40.5	Lebanon City	3,244
5 Minute Drive from City Hall	39.7	5 Minute Drive from City Hall	1,862
15 Minute Drive From City Hall	38.2	15 Minute Drive From City Hall	6,359
30 Minute Drive From City Hall	43.6	30 Minute Drive From City Hall	10,502
New Hampshire	42		
Median Income: 2015		Median Value of Owner Occupied Housing Units : 2015	
Downtown: 1 Mile Radius	\$ 62,827	Downtown: 1 Mile Radius	\$ 250,000
Lebanon City	\$ 62,716	Lebanon City	\$ 260,700
5 Minute Drive from City Hall	\$ 62,697	5 Minute Drive from City Hall	\$ 256,000
15 Minute Drive From City Hall	\$ 66,787	15 Minute Drive From City Hall	\$ 270,200
30 Minute Drive From City Hall	\$ 70,211	30 Minute Drive From City Hall	\$ 267,200
New Hampshire	\$ 66,778	New Hampshire	\$ 250,900
Owner Occupied Housing Units: 2015			
Downtown: 1 Mile Radius	607		
Lebanon City	3,107		
5 Minute Drive from City Hall	1,447		
15 Minute Drive From City Hall	8,956		
30 Minute Drive From City Hall	23,260		
<i>Source: The Nielson Company</i>			

¹ It is noted that average weekly wages in the Lebanon Labor Market Area (page 4) are significantly higher than the State average, while incomes in this table are closer to each other. This is because (1) the geographic areas are different and the income data includes items not included in wages, such as social security income, investment income, retirement income, imputed rents, etc. As such, wage and income data are not reflecting the same factors.

The implications for downtown Lebanon of these trends and characteristics are:

- There is a substantial population base to support downtown Lebanon activities with the 15 minute (primary market) and 30 minute (primary+secondary) market area;
- The regional population base is expected to reflect state-wide patterns of slower growth through 2020 and by extension beyond 2020, because of anticipated slower job growth;
- This slower growth is not a major deterrent to downtown investment, given the current population base of the region;
- The region is relatively affluent, having income characteristics typical of the State average—which is driven by generally affluent areas in southern New Hampshire and the Seacoast region.

Downtown Lebanon Today

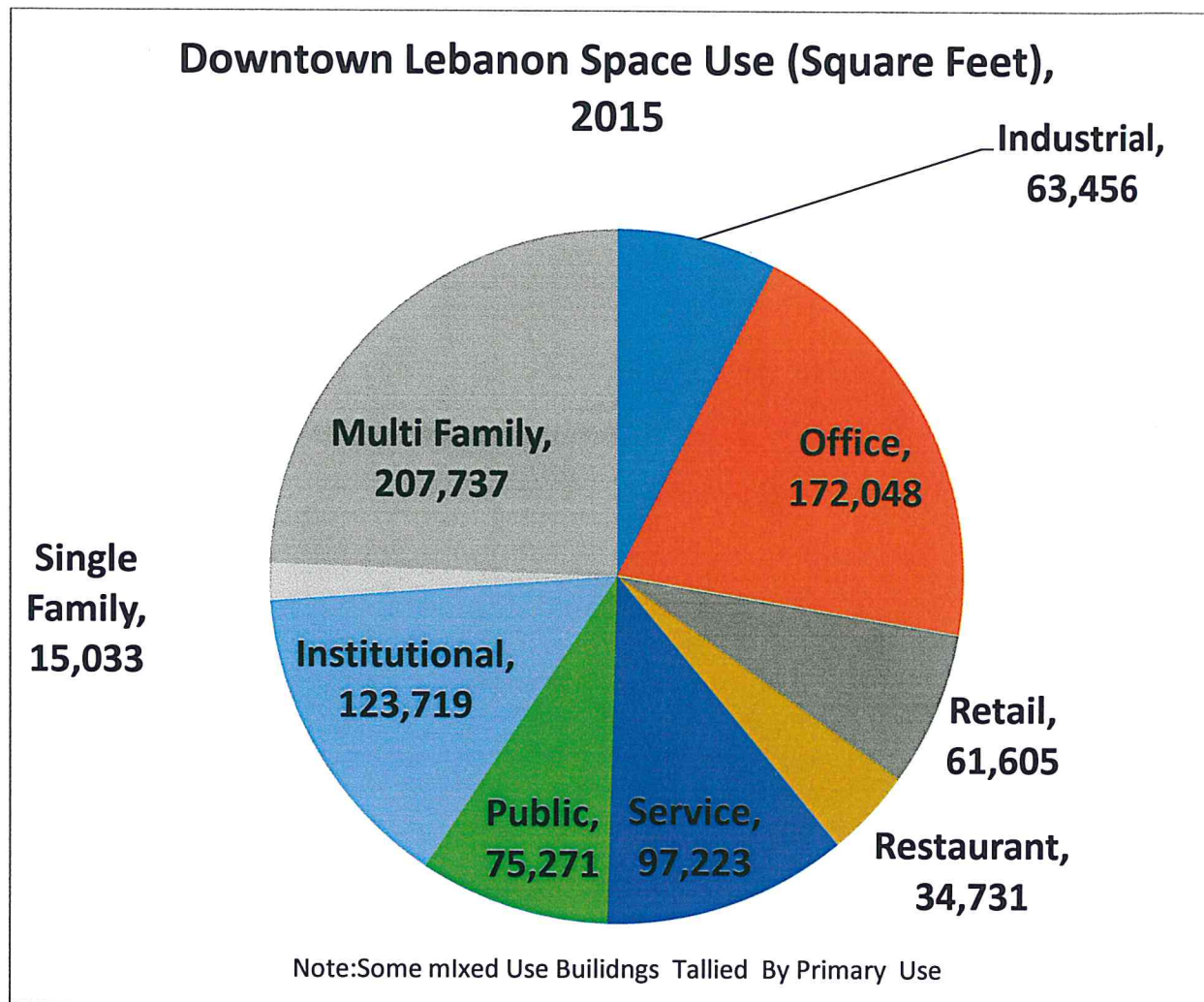
The study area consists of downtown Lebanon including both sides of Hanover Street to the I-89 off-ramp:



From an economic and development perspective, downtown Lebanon is best characterized as a built environment—there are relatively few undeveloped parcels within the designated downtown study area. Some of downtown’s distinctive physical features include:

- The Mascoma river which runs through downtown;
- The pedestrian mall, built after a disastrous fire in the 1960s;
- The CCBA recreational complex, a privately funded nonprofit recreation center;
- Colburn Park, in the center of town;
- A wide array of community and cultural facilities;
- The bike path, which connects downtown to a multi-community bike trail system.

An inventory of existing buildings in the study area was compiled with the assistance of the city planning department. That inventory indicates that downtown currently hosts a diversity of residential, commercial and institutional uses. There is a total of just over 850,000 square feet of building area in downtown, approaching the typical 1 million square feet found in a regional mall. The diversity of uses is evident in this chart:



A parcel-specific delineation of downtown uses is in the technical appendix of this report.

The downtown study area includes a total of 476 dwelling units, 95 percent of which are multi-family units, including the Emerson Place apartment complex (160 units) completed in 2004 and the recently renovated former Middle School (40 units).

Downtown is the cultural hub of the City, housing the 850 seat Opera House in City Hall, the AVA gallery and the unique privately funded CCBA recreation complex including fitness center and outdoor recreation fields and facilities. The location of City Hall, the Library, Post Office, City Center Ballet, Opera North are all positive attributes encouraging downtown visitation, in an era when cultural facilities have replaced department stores as anchors of downtown activity.

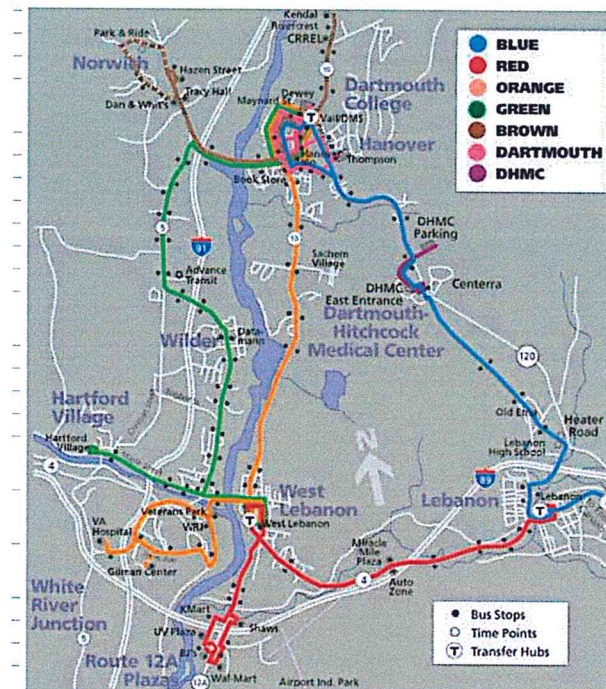
Although downtown does not have a strong retail presence—with only 61,605 square feet of retail space—it is notable that unlike most New Hampshire downtowns (including the highly touted Portsmouth downtown) it does have a full service grocery store. Most conventional retailing is clustered along Route 12A north and south of I-89 and on Route 120 close to DHMC and Hanover.

Also notable is the presence of River Valley College, part of the NH Community College system. The College has acquired the former Lebanon College space on the Downtown Mall. River Valley is now ramping-up and is expected to have approximately 500 enrollees once it is fully staffed and its course catalog is complete. It is noteworthy that downtown hosts the successful farmers' market on Thursdays in season.

The downtown mall, developed in the wake of the disastrous 1964 downtown fire is a pedestrian friendly setting in downtown. Design considerations for the mall continue to be an issue, but its presence provides opportunities as well.

There is adequate parking for the current range of downtown uses. Parking management is an issue in Lebanon as in most downtowns.

Lebanon is one of the few communities its size with an active and successful public transportation (bus) system connecting downtown to Hanover and the Route 12 A shopping plazas, Norwich and Hartford Vermont. Operated by Advance Transit, rides are free.



Downtown is an important source of property tax revenue for the City. The total assessed value of study area properties is \$92 million, of which \$60.4 million is taxable, generating just under \$1.7 million in property tax revenues in 2015.

In conclusion, downtown today offers a wide diversity of uses and is the cultural and institutional hub of the City. Retailing is no longer a primary draw for downtown Lebanon—as is the case with many smaller downtowns in New Hampshire and Vermont. Rather, the primary downtown draw is its cultural and service providers.

Market Opportunities 2015-2030

Market opportunities are analyzed to identify the range of market support downtown can potentially achieve over the 15 year planning horizon. The presumption is that the City will undertake an improvement program consistent with the recommendations in the broader aspects of this analysis—design, infrastructure, etc. set forth in the overall downtown strategy study. In the absence of the City implementing an improvement program with some or all of the recommendations, it is unlikely that the city will achieve the potentials set forth in the following paragraphs.

It is not possible to precisely define the level of new investment that will occur in the future. Therefore, levels of potential market support are set forth in ranges. The identified levels of market support are seen as thresholds—meaning that they set a range of opportunities available to the downtown in consideration of the broader market environment and downtown's role therein. They set forth the range of market opportunities downtown can achieve, provided appropriate sites are available, as identified in the design, infrastructure and parking aspects of this study.

Overall, downtown's investment opportunities are more constrained by the availability of appropriate sites and supporting infrastructure, than by market forces. Generally speaking, the market offers more opportunities than the availability of sites and infrastructure in downtown can absorb. Downtown's opportunities are site constrained, rather than market constrained.

Recent Development Trends

Lebanon has been an active development environment, consistent with the region's strong economy, despite the pronounced 2007-13 economic and real estate recession. Between 2005 and 2014 a total of 1.8 million gross square feet of new non-residential and multi-family space was added to the City's inventory in a diversity of land use types.

Lebanon Non-Residential and Multi Family Development, 2005-2015							
Use	Acres	Gross Building Area	Finished Building Area	Assessed Value			
				Land	Yard	Bldg	Total
Industrial	38.32	329,542	307,176	\$ 5,078,800	\$ 929,300	\$ 29,346,500	\$ 35,354,600
Institutional	26.69	130,047	125,537	\$ 950,700	\$ 167,100	\$ 30,255,000	\$ 31,372,800
Lodging	10.58	161,686	156,077	\$ 2,427,500	\$ 120,200	\$ 23,087,300	\$ 25,635,000
Office/Healthcare	56.23	297,280	255,793	\$ 3,287,970	\$ 255,600	\$ 42,225,900	\$ 45,769,470
Retail	28.99	334,177	286,830	\$ 15,417,500	\$ 782,000	\$ 18,344,300	\$ 34,543,800
Service	9.73	38,022	36,051	\$ 2,704,000	\$ 57,600	\$ 2,509,100	\$ 5,270,700
Total Non-Residential	171	1,290,754	1,167,464	29,866,470	2,311,800	145,768,100	177,946,370
Multi Family	51	534,688	434,744	\$ 11,036,410	\$ 335,100	\$ 34,099,700	\$ 45,471,210
Total Non-residential and Multi Family	222	1,825,442	1,602,208	40,902,880	2,646,900	179,867,800	223,417,580
Source: Lebanon Assessing Office							
C:\Users\Russ\Documents\lebanon downtown\[Copy of non residential development trends version 2.1.xlsx]Sheet1							

On a combined basis these investments represent \$223 million in assessed value.

Major new investments include:

- 151,000 square feet of industrial space at 71 Heater Road (Hypertherm);
- The City's new middle school at 3 Moulton Avenue (Institutional);
- 160,000 square feet of new lodging at 10 Morgan Drive and 25 Foothill Street;
- 102,000 square feet of retail space at 296 Plainfield Road (Home Depot);
- Timberwood apartments, 252 units on Timberwood Drive;
- Alice Peck Day senior housing (66 units) at 23 Alice Peck Day Drive;
- Apartments at 75 Bank Street (41 units) in the former Middle School;

Lebanon is the hub of non-residential development within the Upper Valley, because it has the infrastructure (roads, sewer, and water), Interstate highway accessibility, proximity to support services and available land (although prime development land is becoming scarce).

Supportable Multi-Family Units

Downtown Lebanon is not suited to accommodate new single family units. Multi-family units, however, are compatible with downtown as evidenced by the 160 units Emerson Place Apartments (2004) and the recently renovated middle school, accommodating 40 units.

Downtown's residential amenities include:

- Cultural facilities (the Opera House, AVA, etc.)
- Recreational facilities (CCBA, bike path, athletic fields)
- Community facilities (library, post office, city hall)
- Restaurants (although not a full complement is available)
- Retail shops (although the inventory is thin)
- Special events—farmers' market
- Free public transportation
- Easy access to Interstates 89 and 91

As the baby boomer generation ages there is renewed interest in downtown living with convenient walking to these amenities. As such, many downtowns are experiencing a resurgence of residential investment and the resulting vitality.

Between 2000 and 2014 Lebanon authorized a total of just under 1,350 housing units by building permit. Multi-family units have been the majority of the new units authorized, representing 85 percent of the units authorized by permit.

Housing Units Authorized by Permit																	
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	Total	Average Annual Change 2000-14
Single Family	31	38	35	20	17	15	6	16	3	4	13	10	-3	1	0	206	15
Multi-Family	58	49	42	184	13	115	119	53	78	52	252	-16	63	21	45	1,128	81
Manufactured Housing	0	0	0	0	0	1	1	-1	0	0	0	0	-1	0	0	0	0
Total	89	87	77	204	30	131	126	68	81	56	265	-6	59	22	45	1,334	95
Source: NH Office of Energy and Planning																	
Compiled by NH Housing																	
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Additional trend data is provided by the US Census, which finds lower levels of housing growth than the above permit data.

	2000	2014	Average Annual Change, 2000-14
Single Family Units	2702	3115	30
Multi Family Units	2776	3284	36
Mobile Homes	229	195	(2)
Total	5707	6594	63
Source: 2000 Census; 2014 American Community Survey			
\\residential opportunit			

This discrepancy is at least partially explained by the observation that some units that secure a building permit are not built, leading permit data to possibly overstate activity. Conversely, Census data measures the total inventory at a point in time and does not take into account units built to offset units removed from the inventory. Also Census data for 2014 is based on sample statistics subject to sampling errors, which in the case of Lebanon amount to several hundred units up or down in both the single family and multi-family categories. The actual level of new construction is probably between that indicated by building permit data and the Census sample data.

Another indication of future housing activity is provided by the Upper Valley Lake Sunapee Regional Planning Commission's Housing Needs Assessment completed in 2012. That analysis anticipates rising levels of new housing construction in the region, reflecting anticipated job growth and possibly also the recently depressed level of housing production because of the 2007-12 recession. Between 2000 and 2010 the region added 3,500 units. The Housing Needs Assessment anticipates this will rise to 4,950 units in the ensuing decade.²

² http://www.uvlsrc.org/files/8613/3355/4283/FINAL_HousingNeedsREGN_ver0312.pdf

12 recession. Between 2000 and 2010 the region added 3,500 units. The Housing Needs Assessment anticipates this will rise to 4,950 units in the ensuing decade.²

Considering the building permit data, Census data for Lebanon and the Upper Valley Lake Sunapee Planning Commission's projection, the conclusion is that Lebanon will add an average of 60 multi-family housing units per year over the 2015-30 study period.

Downtown's capture rate and achievable units are as follows:

Estimated Multi-Family Absorption	
Projected Average Annual Units in Lebanon	60
Projected Lebanon Units Permitted 2015-30	900
Downtown Capture Rate: Conservative	20%
Units Downtown, Low	180
Downtown Capture Rate: Aggressive	30%
Downtown Units: High	270
\\units authorized by permit	

To place this activity in context, the lower end of this range approximates the 160 units in the Emerson Place apartments and the upper end approximates the 200 units on a combined basis in Emerson Place and the renovated Middle School's 40 units. This is consistent with the anticipated higher levels of housing production in the Upper Valley housing Needs analysis and the growing interest in downtown living. As such, this level of activity is supported by both a forward looking projection and by downtown's recent development activity.

² http://www.uvlsrc.org/files/8613/3355/4283/FINAL_HousingNeedsREGN_ver0312.pdf

Supportable Office Space

Office and health care uses are combined in this analysis because they tend to occupy similar structures and are comfortable in similar settings. Both need parking in close proximity and both are usually multi-floor buildings. Between 2005 and 2014 a total of 256,000 square feet of new office and health care space was added in Lebanon, the bulk of it in the Route 120 corridor, including Etna Road.

Downtown currently houses a total of 172,000 square feet of office space, with significant clusters at along Park Street and Water Street. Downtown is a viable location for office space, but development trends in recent years have favored business parks outside of the downtown in Lebanon as elsewhere.

DHMC exerts a strong pull on Lebanon's new office construction, as is evidenced by recent development trends, in the Route 120 corridor. New development may also occur in West Lebanon, proximate to the Hanover town line. As such, there are limits on downtown's capture rate for new office space.

Overall, the market provides downtown with the potential to support 22,000-45,000 square feet of new office/healthcare space between 2015 and 2030.

Projected Supportable Office Space, Downtown Lebanon, 2015-30	
Lebanon Gross Space added 2005-14	297,300
Average Annual Addition	29,700
Projected City-wide Absorption 2015-30	445,500
Downtown Capture Rate-Conservative	5%
Downtown Space Supported 2015-2030 Conservative	22,000
Downtown Capture Rate-High	10%
Downtown Space Supported 2015-2030 High	45,000
\\space projection	

Supportable Retail Space

Downtown retailing in New Hampshire communities has declined in significance over the past several decades. The primary cause of this erosion is the suburbanization of retailing and residential living, combined with the advent of shopping centers in the first instance and more recently big box retailing, neither of which fit into the downtown landscape. This has certainly been a force in Lebanon, witness the development of retailing along Route 12A and Route 120. The result has been a conversion of what was once downtown retailing space into other uses, ala the conversion of the former Woolworth store in Lebanon to college use. The net effect of these changes has resulted in Downtown Lebanon supporting only 61,600 square feet of retail space along with 34,700 square feet of restaurant space.

A reversal of these suburbanization trends is beginning to surface. Downtown living is becoming more attractive, enhancing the close-in market opportunities downtowns enjoy. Locally sourced specialty retailing has found a niche in downtown settings not available in either shopping centers or big box power centers. And, downtowns are building on their role as the cultural and service center of the community. They are capturing spin-off spending by visitors in restaurants and community services by more astute marketing and the staging of special events—as is the case in Lebanon with its Colburn Park concerts, farmers market and Opera House performances.

The first indication of future downtown Lebanon is afforded by an examination of the close-in market's ability to support retail space in store types often found in downtowns. The methodology compares consumer spending potential with the estimated inventory of retailing and their sales in the designated area. To the extent that spending potential of consumers living in the area exceeds sales of stores in the area, there is an opportunity for more retail space—potential sales are leaking out of the area. Conversely if the sales of stores in an area are higher than what residents of the area spend, there is said to be an inflow of sales activity.

AER has relied on estimates of demand (resident expenditure) and supply (sales) as estimated by Nielson demographic services within a one mile radius of and a fifteen minute drive radius of City Hall.³ Nielson is a recognized source of spending and sales, frequently relied on by the retail industry. These areas are considered the captive and primary market respectively, available to downtown, while recognizing that downtown's potential reach can and does extend beyond these areas. These figures are estimates and care should be taken to not overweigh their accuracy, but rather to use them to abstract the larger issues and opportunities in the analyzed market setting.

³ AER .commissioned data for a one mile radius, and 5, 15 and 30 minute drive times, for all retail categories. This data is in the technical appendix to this report.

Residents living within one mile of downtown will spend an estimated \$16.9 million in stores often found in downtown settings.

Demand and Supply of Downtown-Type Merchandise Stores			
One Mile Radius			
Category	2015 Estimated Demand	2015 Estimated Supply	Opportunity Gap or (Deficit)
Computer and Software Stores	\$ 245,450	\$ -	\$ 245,450
Camera and Photography Stores	\$ 28,350	\$ -	\$ 28,350
Specialty Food Stores	\$ 595,900	\$ -	\$ 595,900
Health and Personal Care Stores	\$ 3,214,000	\$ 2,419,800	\$ 794,200
Clothing and Accessory Stores	\$ 3,079,250	\$ 2,299,000	\$ 780,250
Sporting Goods, Hobby, Book, Music Stores	\$ 1,254,300	\$ 877,750	\$ 376,550
Miscellaneous Store Retailers	\$ 1,810,400	\$ 558,300	\$ 1,252,100
Restaurants	\$ 6,644,600	\$ 3,808,650	\$ 2,835,950
Total	\$ 16,872,250	\$ 9,963,500	\$ 6,908,750
Source: Nielsen Demographics			
G:\lebanon downtown\2015 01 market opportunities\[retail data nielen.xlsx]Sheet1			

In contrast, Nielson estimates that stores in these categories within that same one mile radius register sales of just under \$10 million, indicating that \$6.9 million of sales in these categories are “leaking” out of the one mile radius. This indicates that relative to resident expenditures, downtown is under-stored and that there are opportunities to potentially better serve the close-in market, especially in the Miscellaneous Store (florists, gift stores, used merchandise, etc.) and Restaurant categories.

Expanding the study area to a fifteen minute drive time (which reaches to the heavily stored Route 12A) exposes several important characteristics of the Lebanon retail market. First, the sales in competitive stores in the downtown merchandise category increases dramatically, rising from just under \$10 million to \$276.7 million.

Fifteen Minute Drive Time			
Category	2015 Estimated Demand	2015 Estimated Supply	Opportunity Gap or (Deficit)
Computer and Software Stores	\$ 3,533,000	\$ 5,341,850	\$ (1,808,850)
Camera and Photography Stores	\$ 360,650	\$ -	\$ 360,650
Specialty Food Stores	\$ 7,574,450	\$ 987,450	\$ 6,587,000
Health and Personal Care Stores	\$ 39,738,950	\$ 62,667,200	\$ (22,928,250)
Clothing and Accessory Stores	\$ 40,478,800	\$ 27,253,500	\$ 13,225,300
Sporting Goods, Hobby, Book, Music Stores	\$ 17,705,300	\$ 33,842,550	\$ (16,137,250)
Miscellaneous Store Retailers	\$ 23,821,550	\$ 22,251,100	\$ 1,570,450
Restaurants	\$ 87,814,000	\$ 124,386,550	\$ (36,572,550)
Total	\$ 221,026,700	\$ 276,730,200	\$ (55,703,500)
Source: Nielsen Demographics			
G:\lebanon downtown\2015 01 market opportunities\[retail data nielen.xlsx]Sheet1			

Of this supply total volume, an estimated \$55.7 million is attributed to consumers living outside the 15 minute drive time. This confirms that estimated sales in the broad inventory of Lebanon retailers in stores types often found in downtowns is supported by a substantial amount of

spending by consumers living outside the area. In retail analysis terms, there is a substantial *inflow* of consumer spending from people living outside the 15 minute ring into stores within a fifteen minute drive from downtown. Lebanon retailers draw shoppers from an extensive watershed along Routes 89 and 91. This is in contrast to an *outflow* of spending from consumers living within one mile of downtown relative to sales of stores within the one mile radius.

This inflow of sales into the regional Lebanon market provides both opportunities and challenges to downtown. On the one hand, downtown should be able to capitalize on the regional drawing power of Lebanon retailers. It is not currently fully capitalizing on that opportunity. On the other hand, the inflow supports a substantial inventory of stores that draw support from Lebanon proper, (including the residents living within one mile of downtown) to the detriment of downtown retailing. The closings of a hardware store, shoe store and a pharmacy during the last 10-15 years in downtown are reflective of the very competitive immediate retail setting facing downtown.

Apart from the competitive pressures downtown faces, there is another issue. The current built environment in downtown does not offer significant opportunities to introduce new retailing. There is relatively little vacant first floor space in downtown suitable for retailing. That is, of course, good. But, on the other hand it does not offer low hanging fruit in the form of vacant store fronts or vacant land to support a significant increase in downtown's retail inventory. This imposes a limit on downtown's ability to tap the regional market, characterized by substantial inflows of consumer spending.

As to a prudent range of additional retailing for purposes of planning the future physical and infrastructure needs of downtown, AER has taken into account the absorption of new retail space in Lebanon during the past decade and assigned downtown modest capture rates of 5% to 10%, resulting in supportable additional retail space in a range of 25,000-50,000 presuming viable sites and infrastructure to support this level of activity are identified in the course of this downtown planning process.

Projected Supportable Retail Space, Downtown Lebanon, 2015-30	
Lebanon Gross Space added 2005-14	334,200
Average Annual Addition	33,400
Projected City-wide Absorption 2015-30	501,000
Downtown Capture Rate-Conservative	5%
Downtown Space Supported 2015-2030 Conservative	25,000
Downtown Capture Rate-High	10%
Downtown Space Supported 2015-2030 High	50,000
<u>\\ space projection</u>	

Conclusions

This report estimates downtown Lebanon's potentially supportable space in new and substantially renovated investment over the 2015-2030 period. The analysis examines the regional economic trends, the current inventory of space in downtown, and the absorption of new non-residential and multi-family space in Lebanon and estimates of downtown's potential capture of that projected new development activity in the City.

Downtown's potentials are:

Downtown Lebanon Market Potential, 2015-2030		
	Low Range	High Range
Multi Family Units	180	270
Multi Family Square Feet	216,000	324,000
Office Square Feet	22,000	45,000
Retail Square Feet	25,000	50,000

In addition to these market potentials, there is the possibility that downtown will accommodate new institutional and government space.

This report is part of a multi-faceted planning study of downtown, examining downtown's physical and infrastructure opportunities and needs. Downtown will have to fine tune its infrastructure and design considerations to achieve these opportunities.

Appendix

C Alternatives

Alternatives

This Appendix provides a summary of the solution alternatives that were developed to address a range of issues and opportunities and the community's vision that were all identified during the planning process. The alternatives were explored and evaluated through a robust public process that is described in Chapter 4. In some instances the Preferred Plan described in Chapter 5 is a hybrid or combination of the alternatives that are described herein. In each case urban design, development and transportation factors were considered.

This summary presents the alternatives on a location-by-location basis as follows.

- West Mall Gateway (Including Tunnel and Taylor Street)
- Tunnel and Mascoma River Greenway Connection
- Colburn Park Traffic Circulation
- Hanover Street at Route 120 Intersection
- Hanover Street Corridor Improvements
- Hanover Street at High Street Intersection
- Spencer Street Development



West Mall Gateway (Including Tunnel and Taylor Street)

Alternative A

Expands the Mall towards Hanover Street to create a new “gateway” with mixed use development and opening views to the tunnel that will be rehabilitated to accommodate the Greenway (Note the Greenway connection alignment is shown in yellow);

Maintains the alignment of Taylor Street as it runs along the river. This configuration allows minimal left turn lanes into Taylor Street and High Street.

Possibly add a bike/pedestrian bridge over the river from Taylor Street and the Mall area to Hanover Street.

Opens the opportunity to infill the riverfront with walks and development through new buildings (shown in brown) and a new parking structure on Flynn Street.

Mall area: Add 3-5 stores/restaurants and 15-20 housing units in two 3-story buildings (33,000sf total). Displace approx. 50 of 110 spaces currently available along Hanover St.

North of Flynn St. area: If parking structure developed, add 110-130 housing units in three 4-story buildings (143,000sf total).



**West Mall Gateway (Including Tunnel
and Taylor Street)**

Alternative A Rendering



West Mall Gateway (Including Tunnel and Taylor Street)

Alternative B

Expands the Mall towards Hanover Street to create a new “gateway” with mixed use development

Closes the tunnel by partial infilling and rebuilding the deck, and relocating the Greenway towards Colburn Park. (Note the Greenway alignment is shown in yellow);

Adds opportunity for a bike/pedestrian bridge over the river from Taylor Street and the Mall area to Hanover Street, or possibly at an appropriate location further upstream.

Modifies the alignment of Taylor Street as it intersects with Hanover Street to create a new intersection where Taylor Street has development on both sides of the street, creating an enhanced sense of entry to the Mall. The Taylor Street entrance will be shifted further away from High Street which would improve the left turn lanes storage length into Taylor Street.

Opens the opportunity to infill the riverfront with walks and development through new buildings (shown in brown) and a new parking structure on Flynn Street

Mall area: Add 3-4 stores/restaurants and 12-18 housing units in two 3-story buildings (27,000sf total). Displace approx. 45 of 110 spaces currently available along Hanover St.

North of Flynn St. area: If parking structure

developed, add 110-130 housing units in three 4-story buildings (143,000sf total)



**West Mall Gateway (Including Tunnel
and Taylor Street)**

Alternative B Rendering



West Mall Gateway (Including Tunnel and Taylor Street)

Alternative C

Expands the Mall towards Hanover Street to create a new “gateway” with mixed use development by removing existing buildings towards the western end of the mall, creating an extended Flynn Street whereby development will line a new road from Hanover Street to the Riverfront.

The Greenway will be located on the river's edge and the tunnel will be removed in its entirety (Note the trail path alignment is shown in yellow);

Opens the opportunity to infill the riverfront with walks and development through new buildings (shown in brown) and a new parking structure on Flynn Street.

The Taylor Street entrance will be shifted further away from High Street improving the left turn lane storage length into Taylor Street. (Note that Taylor Street must remain two-way under each alternative, otherwise too much traffic would be routed through the downtown core streets.)

Mall area: Add 6-12 stores/restaurants and 35-45 housing units in three 3-4-story buildings (72,000sf total). Displace approx. 40 of 110 spaces currently available along Hanover St. and remove 45 Hanover St. buildings (approx. 15,000sf)



**West Mall Gateway (Including Tunnel
and Taylor Street)**

Alternative C Rendering



Colburn Park Traffic Circulation

Alternative A

Reworking the transportation system around Colburn Park to make the following changes:

- South Park becomes a two way street,
- Realigns the intersections on East Park and Bank Street to increase park space
- Narrows the width of North Park for wider sidewalks in front of the park and City Hall
- Make East Park a two way street
- Make West Park a two way street and adds parallel parking

The South Park/East Park/School St. intersection will remain unsignalized and will be modified to include raised medians to control the direction of movements on the approaches. Pedestrian crossings will not exist within the intersection.

The East Park/Bank St./Campbell St. intersection will be reconfigured to accommodate free flow between East Park and Bank St. and to provide turn lanes in and out of Campbell St.

The introduction of medians on South Park and Bank St. provides refuge for pedestrian crossings.



Colburn Park Traffic Circulation

Alternative B

Reworking the transportation system around Colburn Park to make the following changes:

- South Park becomes a two way street,
- Narrows the width of North Park for wider sidewalks in front of the park and City Hall
- Make East Park a two way street
- Make West Park a two way street and adds parallel parking

The East Park/Bank St./Campbell St. intersection will be reconfigured into a modern roundabout with three approach legs. The roundabout will calm traffic and will provide improved pedestrian crossings on all approaches.

The roundabout also provides an opportunity for motorists to reverse direction rather than circulating all the way around the Park as they do today.

The remaining improvements will be the same as under Alternative A.



Colburn Park Traffic Circulation

Alternative C

Reworking the transportation system around Colburn Park to make the following changes:

- South Park becomes a two way street,
- Narrows the width of North Park for wider sidewalks in front of the park and City Hall
- Make East Park a two way street
- Make West Park a two way street and adds parallel parking

The East Park/Bank St./Campbell St. intersection will be reconfigured into a modern roundabout with three approach legs. The roundabout will calm traffic and will provide improved pedestrian crossings on all approaches. The roundabout also provides an opportunity for motorists to reverse direction rather than circulating all the way around the Park as they do today.

The South Park/East Park/School St. intersection will be modified to a three leg roundabout. This will improve access to School Street and would also calm traffic and improve pedestrian access. The roundabout will also provide vehicles the ability to reverse direction, which will be advantageous for buses.

The remaining improvements will be the same as under Alternative A.



Hanover Street at Route 120 Intersection

Alternative A

The RT 120 and Hanover Street intersection will maintain the current “T” interchange and enhance the sidewalks, landscaping, and road alignment.

The Route 120 approach will remain under STOP control and will continue to experience peak hour delay as described in Appendix D. Minor geometric improvements will be made to enhance bike accommodations.



Hanover Street at Route 120 Intersection

Alternative B

The Route 120 approach will be converted from a STOP condition to free flow onto Hanover Street to eliminate delay on this approach. This will be accomplished by creating a sweeping curve to align the two roadways end to end and to slow traffic approaching downtown. The minor Hanover Street southbound approach will Tee into the new Hanover / Route 120 roadway. The intersection will not be signalized and there will be turn lanes on all three approaches. Bike Lanes will be included in the intersection design to accommodate bikes. The resulting traffic operations are described in Appendix D



Appendix C - Alternatives

Hanover Street Corridor Improvements

Alternative A

Reimagines Hanover Street with new crosswalks, landscaping, and lighting.

Improves sidewalks to provide continuous ADA compliant walking corridor.

Improved pedestrian crossings with bumpouts and possibly rectangular rapid flashing beacons at key crossings.



Hanover Street Corridor Improvements

Alternative B

Reimagines Hanover Street removing parking on one side of the street which will make way for on street bike lanes, new crosswalks, landscaping, and lighting on one side. Improves sidewalks to provide continuous ADA compliant walking corridor.

Improved pedestrian crossings with bumpouts on one side and possibly rectangular rapid flashing beacons at key crossings.



Hanover Street at High Street Intersection

Alternative A

The Hanover Street / High Street intersection will be slightly reconfigured to improve pedestrian crossings and to add traffic signals. The signals will improve access from the side streets during peak hours, which is a problem today, and will provide pedestrian signals for the crosswalks. An exclusive left turn lane will be added to the northbound approach on Hanover Street.



Hanover Street at High Street Intersection

Alternative B

The Hanover Street / High Street intersection will be reconfigured into a roundabout. The roundabout will calm traffic on Hanover Street, will improve pedestrian crossings and will provide aesthetic improvement opportunities through the landscaped center island. It will also provide excellent access to and from High Street, and the roundabout may serve as a symbolic gateway to the downtown.



Appendix C - Alternatives

Spencer Street Development

Alternative A

Explores residential development along the length of Spencer Street to understand how that area could grow over time

Roadway improvements would include new sidewalks, streetscape and lighting.

Spencer St. area: 60,000sf of housing on DPW lot; 50-70,000sf on 3+ other sites



Alternative B

Explores commercial development along the length of Spencer Street to understand how that area could grow over time

Roadway improvements would include new sidewalks, streetscape and lighting.

Spencer St. area: 60,000sf of office on DPW lot; 50-70,000sf on 3+ other sites



Appendix

D Traffic Memorandum



To: File

Date: August 9, 2016

Memorandum

Project #: 52383.00

From: Nick Sanders, PE
Senior Traffic Engineer

Re: Traffic Technical Memorandum - Preferred Plan
Downtown Vision and Tunnel Assessment

The purpose of this brief technical memorandum is to document the traffic operations for the Preferred Plan identified in the Downtown Vision and Tunnel Assessment report. Specifically, this memorandum provides a discussion of the development of traffic volumes and summarizes the traffic operations at key study area locations.

Traffic Volumes

Weekday morning and weekday evening turning movement counts conducted at key study area intersections on October 27, 2015 were used as the basis for this traffic evaluation. A review of the turning movement count data as well as historical count data from the New Hampshire Department of Transportation (NHDOT) revealed that the weekday evening peak hour is the critical condition.

Seasonal Adjustment

Per industry standards the traffic counts were adjusted to reflect peak month conditions. The most recent 3 years of traffic data (2012 - 2014) from the NHDOT Urban Highway (Group 4 Averages) and the closest count station (NH 120 in Lebanon) were reviewed to determine seasonal traffic variations in the vicinity of the site. This data indicated that June typically represented the peak month during the weekday evening condition. Therefore, the weekday evening peak hour traffic data was adjusted by 2 percent to reflect peak month conditions.

Traffic Growth

Traffic growth is a function of expected land development in the region. The 2030 future year traffic volumes were developed by the following steps:

- Adding traffic generated from the expected Downtown Vision building scenario (approximately 145 to 235 residential housing units, 30,000± square feet of office space, and 18,000 to 27,000 square feet of retail space). Based on data published by the Institute of Transportation Engineers (ITE) Trip Generation, the Downtown Vision building scenario is expected to generate approximately 295 trips (125 enter and 170 exit) during critical weekday evening peak hour.
- Adding traffic generated by River Valley Community College's expected expansion of approximately 500 students. The Community College expansion is expected to generate approximately 60 trips (40 enter and 20 exit) during critical weekday evening peak hour, based on ITE trip rates.
- Growing the through traffic within the Downtown study area by 0.5 percent annually, based on a review of the closest NHDOT traffic count station (NH 120 in Lebanon), to account for growth outside of the project study area.

Traffic generated from the Downtown Vision building scenario and the River Valley Community College expansion were added to the study area intersections based on existing travel patterns.

2 Bedford Farms Drive
Suite 200
Bedford, NH 03110-6532
P 603.391.3900

Traffic Operations

Capacity analyses were performed at key study area intersections for the Preferred Plan. Levels of service (LOS) were calculated based on the criteria published in the 2000 Highway Capacity Manual¹. Level of service is the term that defines the conditions that may occur on a given roadway or at an intersection when accommodating various traffic volume loads. Levels of service range from A to F with LOS A representing the best vehicular operating conditions and LOS F representing the worst. The intersection capacity analysis is summarized in detail on the following pages.

NH 120 at Hanover Street

Under the Preferred Plan, the intersection of NH 120 at Hanover Street will be realigned making NH 120 from the northeast and Hanover Street from the south the main line operating with the right of way, while the northern approach of Hanover Street will operate under stop control. As a result, the primary movements along NH 120 are expected to operate with little to no delay and at LOS B or better through the 2030 future year. The southbound approach from Hanover Street, which has a substantially lower traffic demand than the main line of NH 120, is expected to operate at LOS F with a delay of 52 seconds and a 95th percentile queue of only 37 feet. These types of delays on minor street approaches are not uncommon along busy roads particularly in urban areas. By comparison, leaving the intersection as it is today with NH 120 operating under stop control, would result in substantially longer delays and queues (more than 80 seconds and 500 feet) for the primary southbound movement on NH 120 approaching Hanover Street.

Hanover Street and High Street

A single lane roundabout at the intersection of Hanover Street and High Street is expected to provide good operations on all approaches (LOS B or better) through the 2030 future year condition. Queues are expected to be 160 feet or less on all approaches. Without the improved traffic control via the roundabout, the eastbound High Street approach, which services 280 vehicles during the peak hour, would experience very long delays and queues. The roundabout also has the benefit of introducing a gateway into the Downtown area, improving pedestrian access and calming traffic.

Hanover Street at Taylor Street

The intersection of Hanover Street at Taylor Street will be reconfigured to provide a southbound left-turn lane on Hanover Street and accommodate two-way travel on Taylor Street. As a result, the southbound left-turn on Hanover Street is expected to operate at LOS A with an 8 second delay in the 2030 future year. The left-turn lane on Hanover Street with the reconfiguration of Taylor Street will provide an improved and more visible entrance into the Downtown business area and help alleviate traffic along South Park Street. The Taylor Street approach is expected to operate at LOS C, which is the same as existing conditions, with a delay of 21 seconds and a 95th percentile queue of 61 feet.

¹ Highway Capacity Manual, Federal Highway Administration, Transportation Research Board, 2000.

Hanover Street at Mascoma Street

The intersection of Hanover Street at Mascoma Street will be reconfigured to accommodate left-turns from Mascoma Street and consolidate the curb-cuts along the north side of Hanover Street into one full access driveway opposite Mascoma Street. The minor street approaches from Mascoma Street and the driveway from the north will be realigned and operate under stop control. The Mascoma Street approach is expected to operate at LOS F with a 51 second delay and a 95th percentile queue of 307 feet during the 2030 weekday evening peak hour condition. However, the mainline approaches along Hanover Street are expected to operate at LOS B or better in the 2030 future year, with the addition of left-turn lanes on Hanover Street. The new roundabout at Hanover Street / High Street is expected to accommodate the majority of the northbound outbound traffic away from the Mascoma approach and lessen the delays.

Mascoma Street at S Park Street / W Park Street / Church Street

The intersection of Hanover Street at S Park Street / W Park Street / Church Street will be reconfigured to accommodate two-way travel on all approaches. Additionally, the existing weaving movement from the southbound double right-turn from W Park Street to Hanover Street will be eliminated by providing a single southbound right-turn lane with a sharpened corner radius to reduce speeds. With the addition of left-turn lanes on Mascoma Street and S Park Street, the mainline approaches are expected to operate at LOS B or better in the 2030 future year. The northbound minor street approach from Church Street is expected to operate at LOS F with a 95th percentile queue of 74 feet during the 2030 weekday evening peak hour condition. The southbound approach from W Park Street is expected to operate at LOS E with a delay of 41 second and a Queue of 123 feet. It should be noted that the introduction of two-way travel along S Park Street, W Park Street and East Park Street will help reduce volumes around the Downtown Park area.

S Park Street at School Street / E Park Street

A single lane roundabout at the intersection of S Park Street at School Street / E Park Street is expected to operate at LOS D on the eastbound S Park Street approach and LOS B or better on all other approaches through the 2030 future year condition. It should be noted that the 95th percentile queues are expected to be 415 feet on the S Park Street eastbound approach, which extends just beyond Church Street.

E Park Street at Bank Street / Campbell Street / N Park Street

The intersection of E Park Street at Bank Street / Campbell Street / N Park Street will be realigned such that E Park Street and Bank Street are the mainline operating with the right of way. Campbell Street will intersect from the north and operate under stop control. N Park Street will intersect Campbell Street from the west and will be reduced to a single lane one-way (westbound) roadway. The two-way travel along E Park and S Park will substantially reduce traffic volumes along N Park Street allowing for the lane reduction, which provides the additional space for the widened landscaped sidewalk with bump-outs at crosswalk locations. All approaches at these reconfigured intersections are expected to operate at LOS C or better with delays of 22 seconds or less through the 2030 future year condition.

INTERSECTION CAPACITY ANALYSIS SUMMARY

Location (control) / Movement	2030 PM Peak Hour (Preferred Plan)				
	Demand	v/c	Delay	LOS	Queue
NH 120 at Hanover St (unsignalized)					
EB left-turn lane from Hanover St (NH 120)	45	0.06	10	B	5
SB left-turn lane from Hanover St	40	0.36	52	F	37
SB right-turn from Hanover St	40	0.11	16	C	10
Hanover St at High St (roundabout)					
EB movements from High St	345	0.55	11	B	83
WB movements from driveway	25	0.06	7	A	5
NB movements from Hanover St	315	0.45	8	A	58
SB movements from Hanover St	700	0.72	11	B	160
Hanover St (NH 120) at Taylor St (unsignalized)					
WB movements from Taylor St	190	0.47	21	C	61
SB left-turn from Hanover St	135	0.12	8	A	10
Hannover St at Mascoma St (unsignalized)					
EB left-turn from Hanover St	20	0.02	8	A	1
WB left-turn from Hanover St	340	0.36	10	B	41
NB movements from Mascoma St	580	0.92	51	F	307
SB left/through from plaza	35	>1	#	F	#
SB right-turn from plaza	10	0.02	9	A	1
Hannover St at Church St / Park St (unsignalized)					
EB left-turn from Hanover St	45	0.05	9	A	4
WB left-turn from S Park St	20	0.03	11	B	3
NB movements from Church St	30	0.66	124	F	74
SB movements from S Park St	195	0.70	41	E	123
S Park St at School St / E Park St (roundabout)					
EB movements from S Park	855	0.96	34	D	415
WB movements from Post Office	5	0.03	8	A	3
NB movements from School St	230	0.47	11	B	63
SB movements from E Park St	325	0.40	6	A	48
E Park at Bank St / Campbell St (unsignalized)					
EB left-turn from E Park	205	0.20	9	A	19
SB movements from Campbell St	135	0.45	22	C	57
Campbell St at N Park St (unsignalized)					
NB left/through from Campbell St	275	0.08	3	A	6
N Park St at Court St (unsignalized)					
WB movements from N Park St	110	0.15	8	A	13
NB movements from West Park St	85	0.11	8	A	10
SB movements from Court St	105	0.14	8	A	13

Demand expressed in vehicles per hour.
v/c – volume to capacity ratio.
Level of service.

Delay expressed in seconds per vehicle.
Queue (95th percentile) expressed in feet.
- delay/queue not calculated (over capacity).

N Park Street at Court Street and W Park Street

The intersection of N Park Street at Court Street and W Park Street will be reconfigured to provide two-way travel on W Park Street with all way stop traffic control. All approaches are expected to operate at LOS A with a delay of 8 seconds through the 2030 future year condition.

All supporting material referenced within this technical memorandum has been provided to the City of Lebanon Planning Department and is available for review upon request.

Appendix

E Branding Guide Strategies



Lebanon Downtown Vision Plan Community Brand Guidebook

Introduction

Whether deliberate or unintentional, all communities have a “brand”. It is built up over time through a communities’ policies, its residents, its amenities and its physical character. As Community Branding expert Don McEachern has explained, a community brand “is what they say about you when you’re not around.”

Crafting a deliberate community brand extends far beyond just a logo or a tagline. It provides a clear message about what the community represents through both visual and language elements and is manifested throughout digital and print media as well as physical elements of the City such as gateways, streetscapes and signage. The brand should reflect the vision established by the community and respond to the needs of a “target audience”, or the people who come to visit and stay. A strong community brand must be authentic and rooted in reality, and if done right can support economic development, tourism and a sense of community for generations to come.

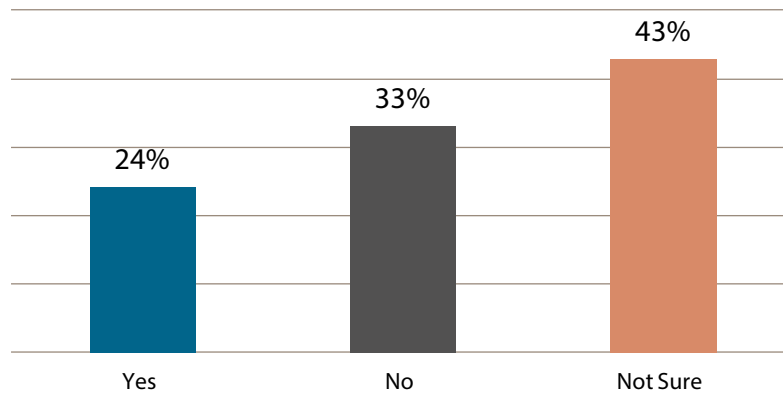
If a community has done a particularly good job at identifying and understanding its brand, it won’t just serve as a marketing tool. Rather, it will actually be used to guide decision-making, almost like a citywide mission statement. As Alison Maxwell, Deputy Director of Economic Development for Glendale, California has said, “A city is not Coca-Cola. It’s a living, breathing, amorphous entity. Good branding can bring the sum of the parts together and give you a hook to hang your identity on.”

Community Input

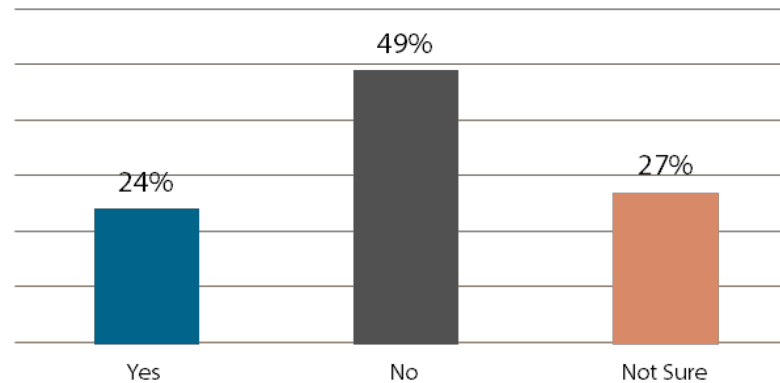
The community's ideas about Lebanon's brand were explored through an online survey and through keypad polling, comments, and discussions at the public meeting held on June 2, 2016. More than 180 individual responses were collected for the branding survey and 43 residents provided branding feedback at the public meeting. In considering the input from the public meeting it should be stressed that this was done as a keypad polling exercise and respondents could only select one (1) option. For several of the questions (noted with an *), this makes direct apples-to-apples comparison impossible. What is more important are the patterns the results suggest.

Does Lebanon's Downtown Have A Community Brand?

Branding Survey

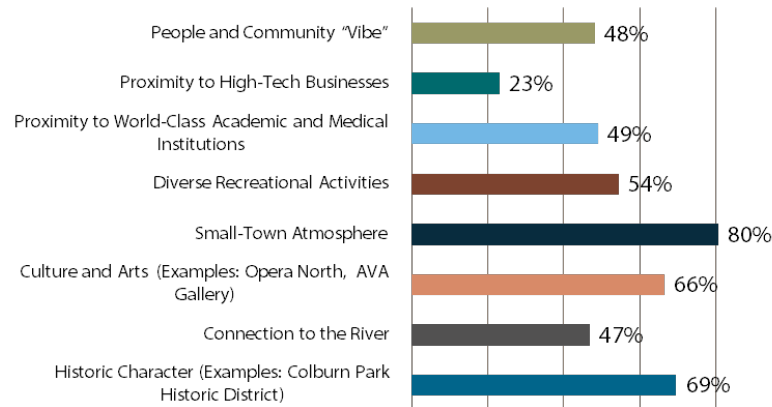


Public Meetings

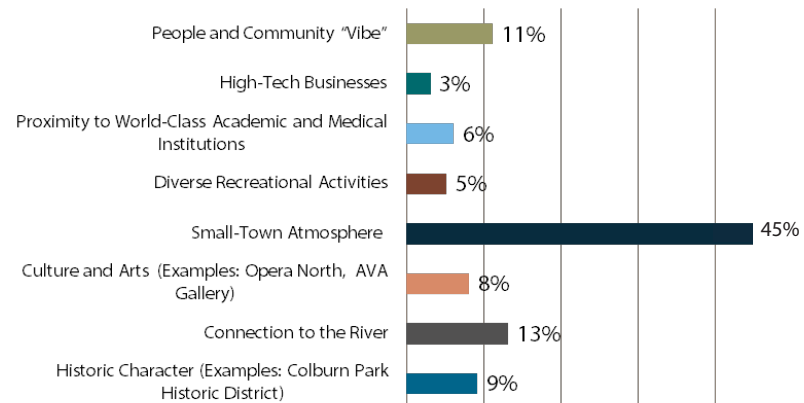


Which Elements Make Downtown Lebanon Special?

Branding Survey



Public Meetings *



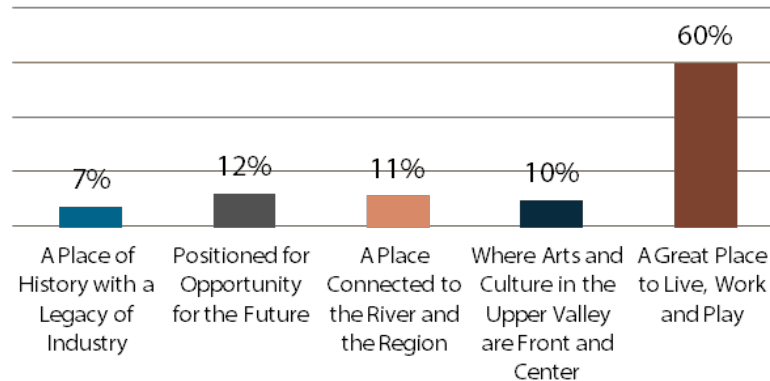
KEY TAKEAWAYS

- ❑ "Small-Town" Atmosphere strongly resonated with respondents.
- ❑ Digging more deeply into what is a "small-town atmosphere" might be a helpful part of finding the Downtown Lebanon brand
- ❑ Historic character and Arts/Culture also have strong resonance with the respondents

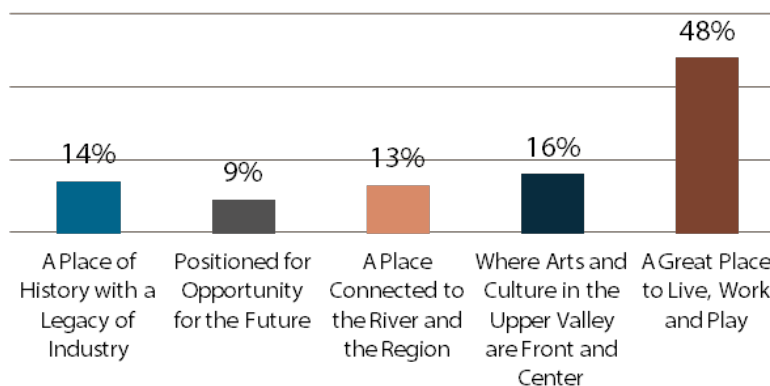


Which of the Following Do You Think Best Reflects Downtown Lebanon's Brand?

Branding Survey



Public Meetings



KEY TAKEAWAYS

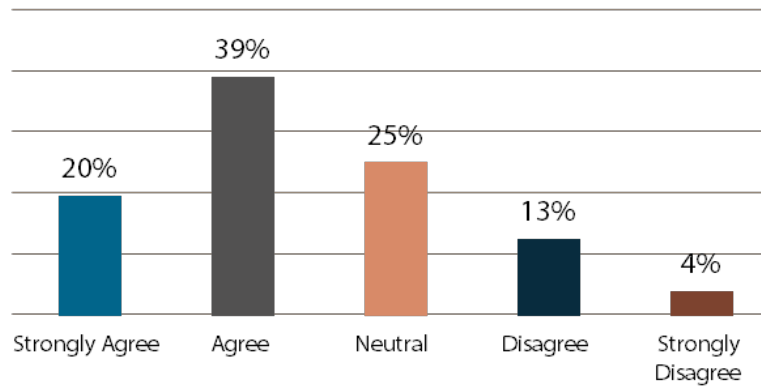
- ❑ This question was asked, in part, to test if respondents either had a more general or narrow idea about the community brand. The inclusion of “Great Place to Live, Work and Play” option was somewhat of a red herring; it was cliché and very general, by design. The overwhelming response to this option suggests the community does not have a strong notion or idea on the Downtown Lebanon brand.
- ❑ While a plurality of respondents chose the more generalize brand statement, responses to the other narrower statements did attract interest.



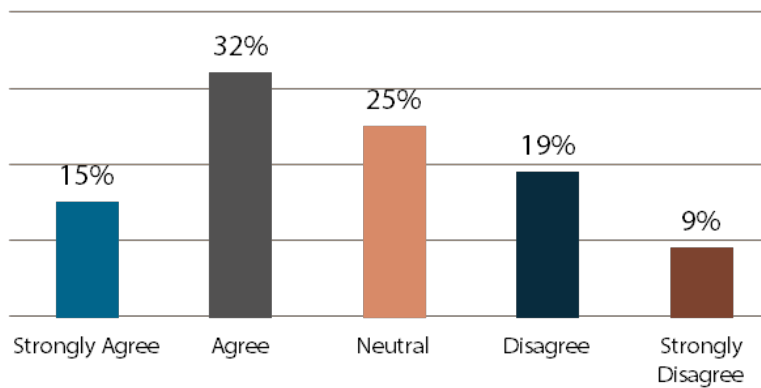
What Should the Brand for Downtown Lebanon Focus on Achieving?

EXPANDING RECREATIONAL TOURISM

Branding Survey



Public Meetings



KEY TAKEAWAYS

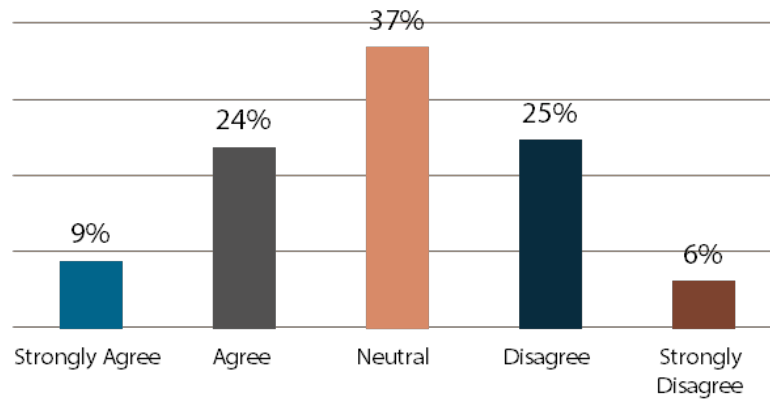
- When considering the potential “target audience” of the community brand, it seems Recreation might be a good filter to consider.
- Understanding what “Recreational Tourism” might mean for Lebanon (what are the recreational offerings, how do they influence the experience) might be good to explore in developing the community brand.



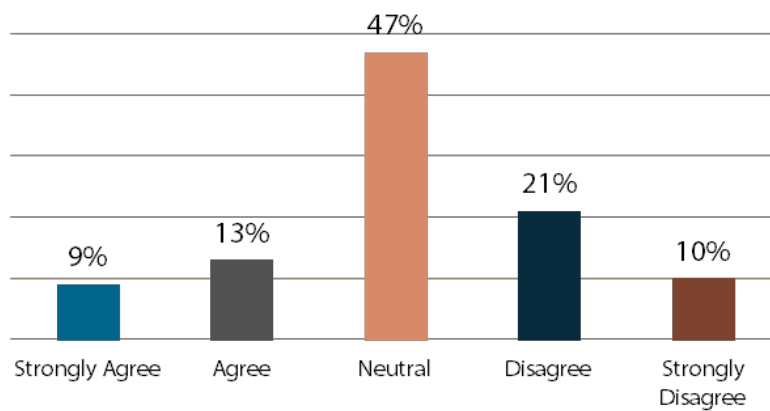
What Should the Brand for Downtown Lebanon Focus on Achieving?

ATTRACTING NEW INSTITUTIONS

Branding Survey



Public Meetings



KEY TAKEAWAYS

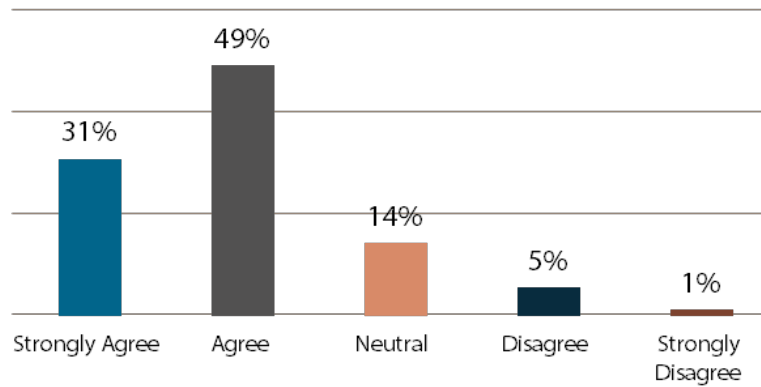
- Respondents seemed less inclined to define new institutions as a part of the “target audience” for the community brand.



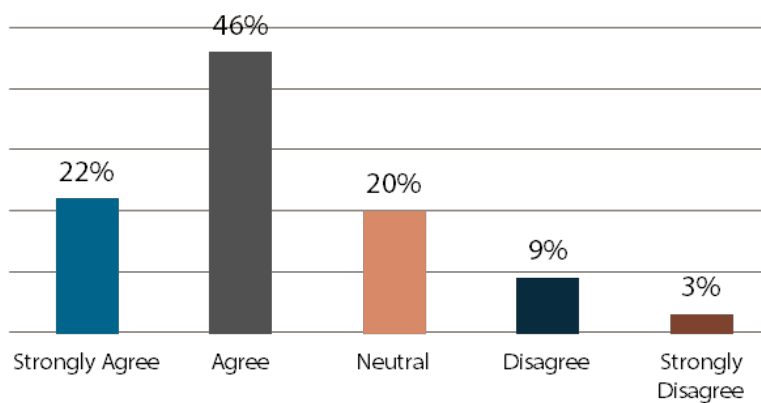
What Should the Brand for Downtown Lebanon Focus on Achieving?

ENHANCING UPPER VALLEY VISITATION TO DOWNTOWN VIA CULTURAL EVENTS

Branding Survey



Public Meetings



KEY TAKEAWAYS

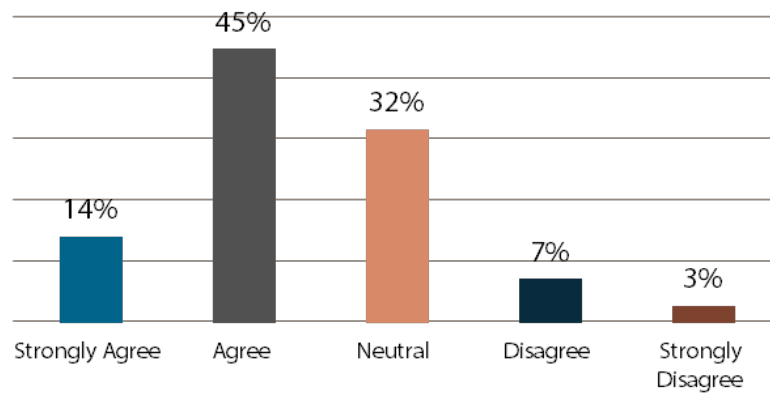
- ❖ This question introduced two key ideas into the brand conversation; culture/arts and focusing on an Upper Valley “target audience”.
- ❖ The response was very positive in both the survey and poll and suggests these elements might align well with community input as a brand is explored.



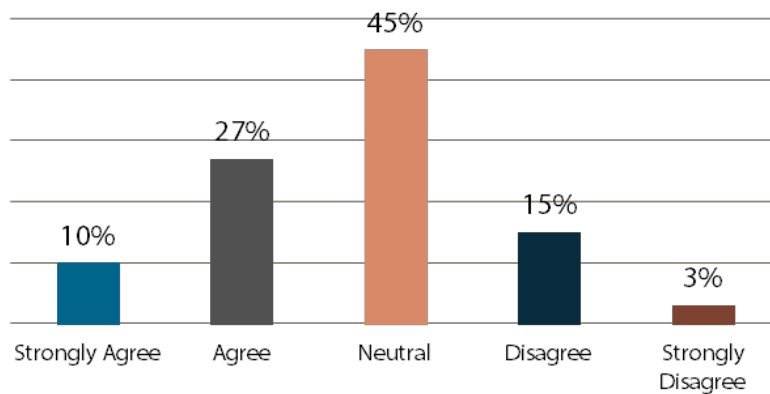
What Should the Brand for Downtown Lebanon Focus on Achieving?

ATTRACTING NEW JOBS

Branding Survey



Public Meetings



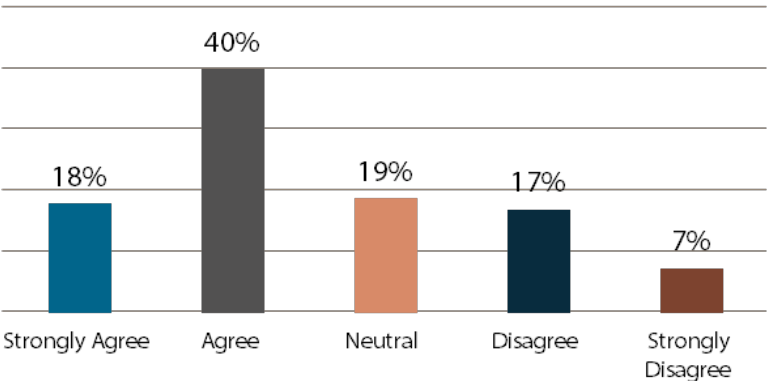
KEY TAKEAWAYS

- ❑ The broader community survey indicates a greater affinity for attracting new jobs (i.e. new employers) as a role for the brand.
- ❑ Exploring what type(s) of job/employer might align best with Lebanon would be a good follow-up to refine this input.

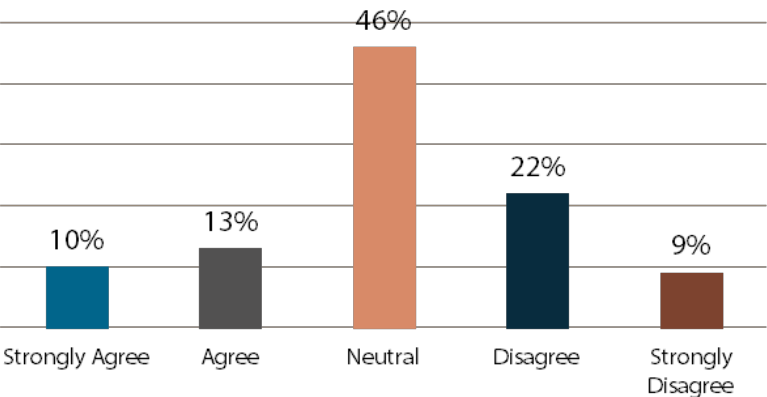


What Should the Brand for Downtown Lebanon Focus on Achieving?

SUPPORTING RESIDENTIAL GROWTH
Branding Survey



Public Meetings



KEY TAKEAWAYS

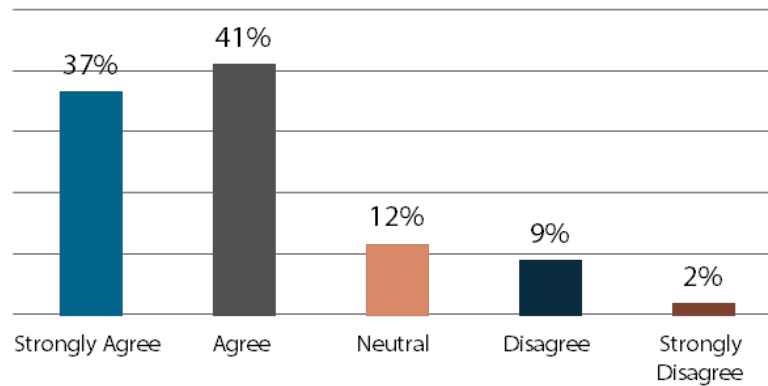
- ❖ The broader community survey indicates a greater affinity for attracting new residents as a role for the brand.
- ❖ Lebanon might want to explore what type of resident (young single professionals, young families, seniors, etc.) best aligns with the brand.



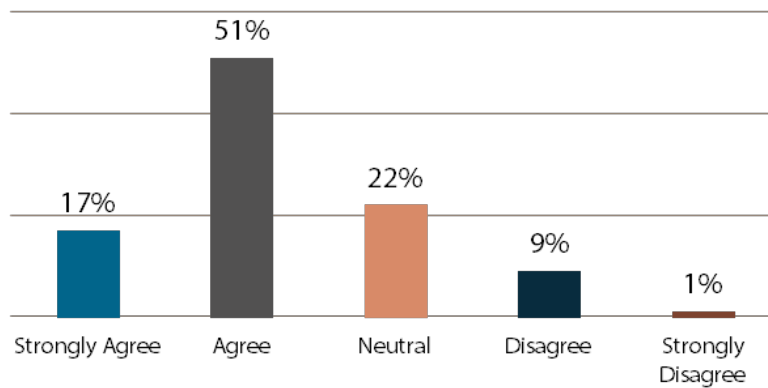
What Should the Brand for Downtown Lebanon Focus on Achieving?

INCREASING DOWNTOWN RETAIL ACTIVITY

Branding Survey



Public Meetings



KEY TAKEAWAYS

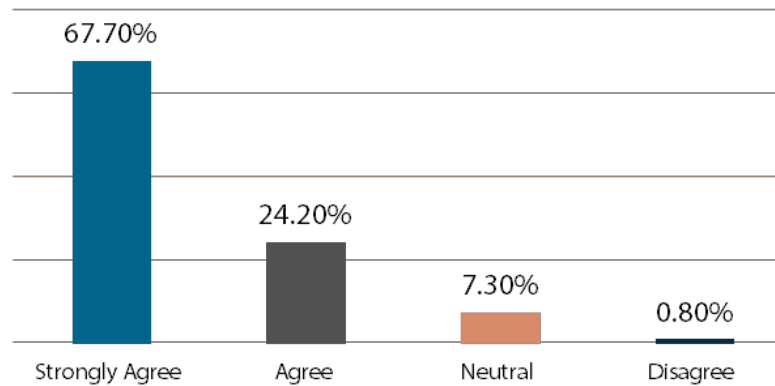
- Highlighting the role of Downtown plays in local retail activity seems well aligned to the community's idea for a brand
- Exploring how this retail experience is unique and speaks to the intended target audience will be important.



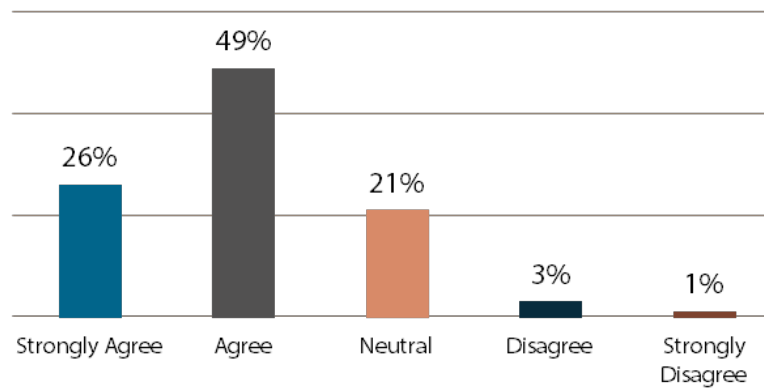
What Should the Brand for Downtown Lebanon Focus on Achieving?

ENHANCING THE QUALITY OF LIFE FOR RESIDENTS

Branding Survey



Public Meetings



KEY TAKEAWAYS

- While the “target audience” for a brand might be outwardly focused, a good community brand should also resonate widely with residents and locals.
- Assuring the community “sees itself” in the brand is vital to its success.





Case Studies

An often effective way to consider what a community brand might be and help accomplish is to consider “case studies” from other, similar communities. The three communities described are Brunswick (Maine), Keene (New Hampshire) and St. Albans (Vermont). Each of these communities share similar characteristics with Lebanon (moderate sized, historic qualities, need to revitalize) and each had recently been through a master planning and/or community visioning process.

For each community there are identified “Lessons Learned” or elements that highlight important aspect of building a community brand.





Brunswick, Maine

Brunswick, Maine is a coastal college town with a vibrant pedestrian-friendly downtown that offers residents and visitors a balanced mix of retail, civic and open spaces, and restaurants. The Town's distinctive broad Main Street combines "village flavor and city flair." The Town is a recreational and cultural hub for the surrounding region whose economy is supported by retail trade, professional and arts-related businesses, light to medium industry—including L.L. Bean Manufacturing—and traditional farming, forestry, and commercial fishing.

The Brunswick Downtown Association (BDA) is a non-profit partnership of local businesses, college and arts communities, support organizations and neighborhood associations that works to "develop and maintain a vital, hospitable and lively downtown: a location for congregation, socializing and commerce and a source of pride for residents and neighbors." The BDA coordinates downtown improvement projects, sponsors public programs and organizes special events—all of which support the collective community brand. The BDA maintains a close relationship with the Town's Department of Economic and Community Development, and works in concert with the Town's Downtown Plan.

Through the joint efforts of the BDA and the Town new sidewalks, streetscape improvements, landscaping, and attractive islands and

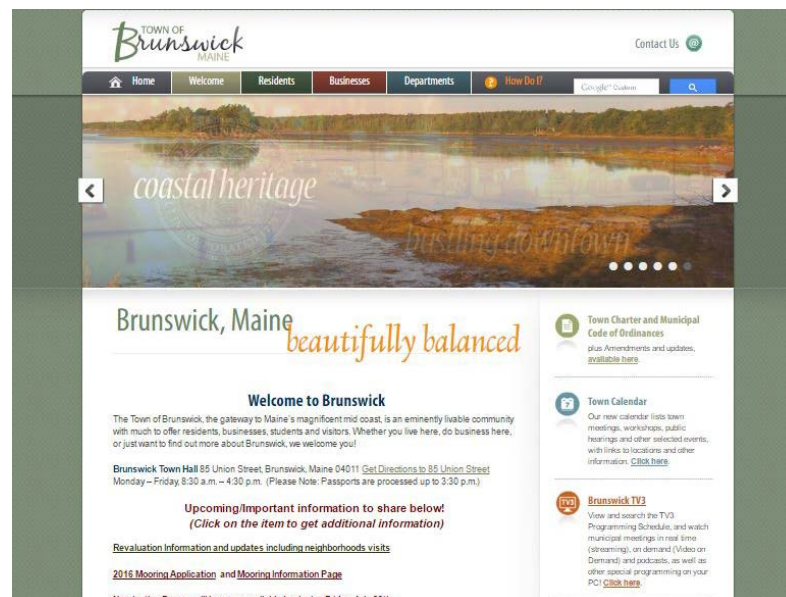
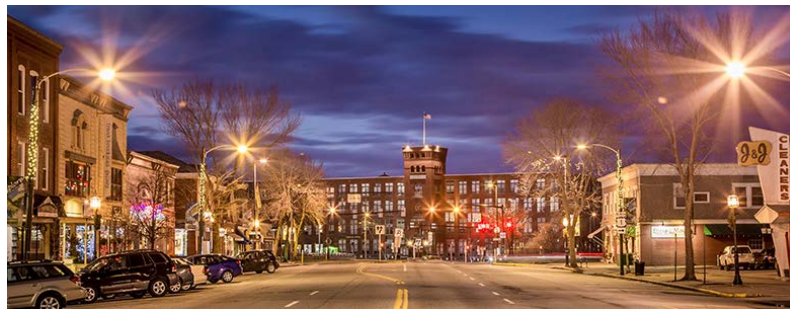
"pedestrian refuges" have been installed throughout Brunswick's downtown to create a unified, pedestrian-friendly district that helps to reinforce the community's brand. Improvements within the Town Green and way-finding kiosks and maps have been installed in convenient locations to direct pedestrians and drivers to downtown businesses and attractions. These coordinated improvements have converged to create a vibrant, cohesive and distinctive downtown that reflects the culture, history and scenic character of the Town

Brand Statement: "Rich in tradition, history, and natural beauty, Brunswick is a community of talented, innovative and involved citizens. Brunswick's residents are fortunate to have access to beautiful recreational areas, high quality educational and medical resources, and growing employment opportunities."



LESSONS LEARNED:

- Effective community brand management requires a broad coalition of municipal government, local businesses and community leaders.
- Downtown associations or similar organizations can help bring cohesiveness to downtown improvements and help ensure the community's brand is reflected in individual and collective projects.
- Strong brands should be built upon specific characteristics that make your community special within the market you are appealing to. Many New England communities may have 'village charm and big-city amenities' or "village flavor and city flair," or be "great places to live, work and play." The most successful community brands dig deeper to identify the distinctive qualities that contribute to these overall qualifiers.





Keene, New Hampshire

Keene is a small college town in southern New Hampshire. The downtown is oriented around a traditional New England square, visually anchored by the historic character of the white-washed United Church of Christ. The Keene community brand is expressed throughout the downtown in landscaping, streetscape amenities and visual continuity in the built form. In digital and print media, the Keene brand is again visually anchored by the United Church of Christ represented in the Downtown Keene, Chamber of Commerce and “Building a Sense of Place” logos.

Keene has approached the concept of community branding by seeking to engage and enliven local residents first and foremost. Through public-private partnerships the community has created the ‘Building a Spirit of Place’ community development and beautification project that “seeks to enhance the appearance of Keene while building a sense of pride and community spirit, thereby improving the environmental, economic, and social well-being of our city and its neighborhoods for today and tomorrow. We embrace the proposition that citizens can create and shape the communities in which they live. We challenge organizations and individuals to enhance the appearance of their community, while building a sense of involvement and pride.”

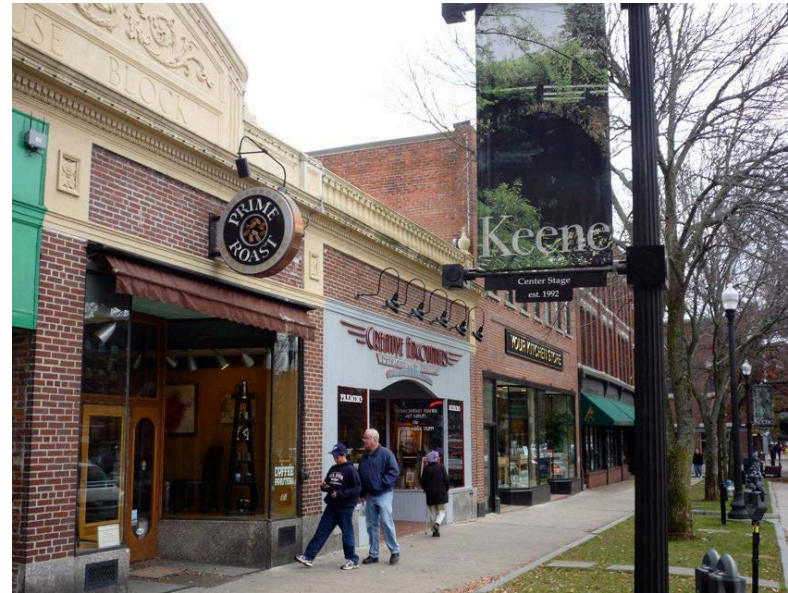
Initiatives like the mural project or the myriad of “adopt-a-facility programs” for benches, bike racks, hydrants, streets and trails create avenues for local residents and business to take direct ownership and responsibility for improving their community. The program simultaneously strengthens the value and appeal of Keene, while fostering a strong sense of community pride.

Brand Statement(s): “Building a Spirit of Place envisions a strong, vibrant place where the health and well-being of Keene and the people who live, play, study and work here are nourished and supported. We visualize a community where our residents work together and participate in a meaningful communal life. We seek to foster pride and awareness working together for our city and the quality of life for those who call Keene home.”



LESSONS LEARNED:

- ❑ Distinctive focal points of the built form in a community—like the United Church of Christ—can provide an excellent visual platform on which to anchor your community brand in both physical and media manifestations of the community brand.
- ❑ Engaging local residents and businesses in improving their City and communicating the community brand can further your branding and beautification goals while also improving the community's image of itself.





St. Albans, Vermont

St. Albans is a small city in northwestern Vermont about 15 miles south of the Canadian border. St. Albans has had a long history of rail activity—being dubbed the Railroad City of Vermont in the 1860s. The City still plays host to numerous freight rail lines and is the northern terminus of Amtrak's Vermonter line beginning in Washington, D.C. It is also home to the Vermont Maple Festival, held each year in late April.

St. Albans had a reputation for being a "city in decline" for much of the 20th century, but the City has undergone a powerful transformation in recent years. St. Albans has welcomed nearly 50 new businesses and 300 workers to its historic downtown and commercial center over the past five years. This robust revitalization was no accident—businesses, property owners and municipal officials have worked together on a concerted effort to reconstruct and improve the sidewalks, roadway, utilities, and visitor amenities in the downtown. The community has taken advantage of a series of state and federal programs since 2012, receiving designation from the Vermont Downtown Program and numerous federal transportation grants (TIGER, TEP and TAP), among others. It has also utilized Tax Increment Financing (TIF) funding to incentivize private development. These programs have allowed the community to leverage approximately \$4 million of public infrastructure

investments to gain about \$40 million in private investment over the same period, which is a truly staggering success.

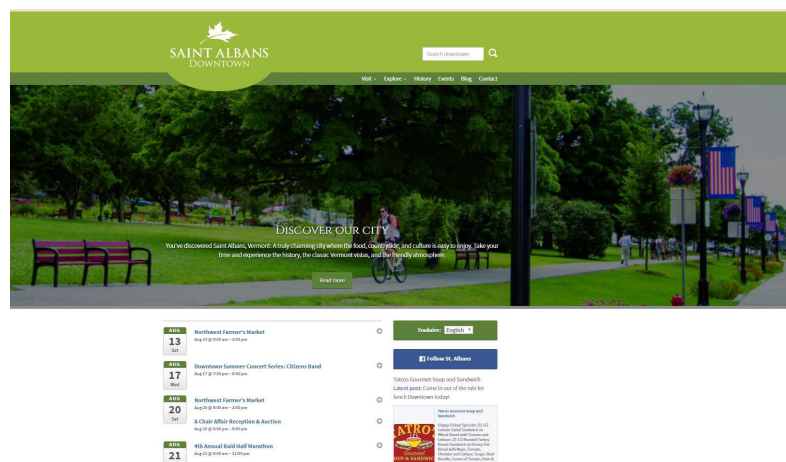
Downtown improvements in St. Albans have been organized through a public-private partnership that includes the City's Downtown Board, a non-profit called St. Albans For The Future (SAFF), and the commitment of many businesses and community volunteers. Residents are offered numerous opportunities to be involved in the partnership including four downtown committees, all of which touch on managing the community brand: Organizational, Design, Promotion and Economic Development. In just a few years, the collective efforts of the public-private partnership have reframed the perception of St. Albans from a City on the decline to a City on the rise. Today, St. Albans is thought of as a premier Vermont market to start a business, and as a great place to both live and visit.

Brand Statement(s): "You've discovered Saint Albans, Vermont: A truly charming city where the food, countryside, and culture is easy to enjoy. Take your time and experience the history, the classic Vermont vistas, and the friendly atmosphere."



LESSONS LEARNED:

- Investment in public infrastructure is often a necessary catalyst for private investment that can transform the physical character, economic vibrancy, and public perception of a community.
- Community brands are shaped by the experience of place. While beautiful logos and catchy messaging are important components of a community brand, these efforts will not bear fruit if the community cannot deliver on the “brand promise” they suggest. Thus, physical improvements that reflect and support the brand are an integral part of crafting a positive community identity.



THE DOWNTOWN LEBANON BRAND

The community input provided an initial exploration about the community brand for the City of Lebanon. While the input provides a good starting point, it seems that Lebanon's current community brand is not well defined or well understood by the community.

There was some consensus around key elements of what might be Lebanon's brand such as its historic context, regional role and identity, and the physical attributes of the community such as the evolving downtown, the Opera House, Colburn Park and the Mascoma River. The notion of a having a "small-town" feel was also an important characteristic that seemed to resonate with the public.

Many of these elements (history, Opera House, Colburn Park, and the River) are obviously part of the experience in Downtown Lebanon, and many of these elements are expressed through the City's web presence, community logos or evoked within existing signage or wayfinding systems. The fountains within the City express some of this history as well.

Some banners within Downtown communicate Lebanon's place (location) within New England, suggesting Lebanon is the "Center of New England". The role or importance of this geographic location is not clear. Does it imply Lebanon is "easy to get to" or "convenient"?

The gateway sign into Lebanon near the intersection of Hanover Street and Route 120 portrays a likeness of City Hall surrounded by trees. The distinctive visual character of City Hall lends itself well as an icon much like the United Church of Christ in Keene or the maple leaf in St. Albans.

A drive around Downtown Lebanon points to a significant lack of visual communication with few gateway or arrival signs, few directional or

informational signs. Where signs do exist, they do not have a common visual identify or expression that someone could associate with a brand. No common motif exists.

In 2011, then New Hampshire Governor Lynch issued a proclamation that stated (in part):

"Although Lebanon is the smallest city in the State of New Hampshire, it has been repeatedly recognized as the finest small city to live in, providing a high quality of life for all citizens through quality services, strong schools, and a close-knit community atmosphere."



GUIDE TO BUILDING A COMMUNITY BRAND

The Downtown Vision for Lebanon affords the community a new opportunity to explore itself and help coalesce key attributes and values around a community brand. As noted in the introduction, building a brand is not designing a logo or wayfinding system. It starts first by exploring who you are through conversation and dialogue, evolving into a common story that can be communicated in word and image.

There are five (5) important steps that the community can take to help build a brand for Downtown Lebanon:

START WITH WHAT YOU HAVE | Conduct an Inventory of Place

- ❑ Catalogue the attributes that make the City of Lebanon a great place to live, visit and start a business. Be specific about what makes the community unique—beyond just “high quality of life” or “access to recreation.” What are the things in Lebanon that are special and why?
- ❑ Look backwards and forwards in exploring your attributes. How has the community evolved? Does history provide some references that might inform a brand?
- ❑ Establish key target audiences your brand should speak to. This could include the visitors you hope to draw in, but also businesses or residents you’d like to attract and retain. Consider geographic areas, demographics, lifestyle/psychographics (identification of personality characteristics and attitudes that affect a person’s lifestyle and purchasing behaviors), and industries best suited to your unique community characteristics—what is your comparative advantage? What is your role or position within the larger region?
- ❑ Find areas of common agreement - what are the “touchstones” that

everyone can agree with?

- ❑ Explore inputs (cultural, historic, and natural) that might form a unifying basis for a brand.
- ❑ Engage the community through surveys, stakeholder interviews, public meetings, and media to let them weigh in on important assets and markets.

COME TOGETHER! | Hold a summit on exploring the community brand

- ❑ Get all key partners together to share their individual idea of the Lebanon Brand.
- ❑ Cast a wide net; businesses, institutions, organization and residents in this discussion.
- ❑ Understand that many partners need to be able to communicate to their customers and will have their own messages and needs. Remember, however, that often they are the SAME customers.
- ❑ All voices need to be heard and concerns raised. Like it or not, you are all in the same boat.
- ❑ Consider bringing in an outside facilitator for this process. Someone without political or financial interest in the community can help ensure a fair and efficient process.



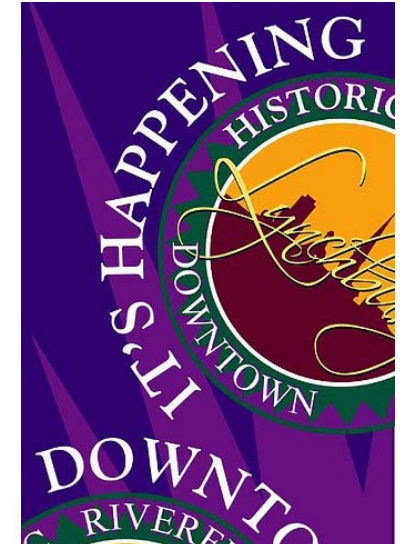
WRITE A STORY | Define the “common story” and “brand promise”

- ❑ Craft a “Story” for Lebanon. Why do people live in or visit the City, and what do they do when they are here?
- ❑ How do the attributes of Lebanon weave into this story?
- ❑ Develop the “brand promise.” This should describe the envisioned future of the community and should be short, very specific and well-articulated.
- ❑ Remember the brand is about the “experience” not the place. Focus discussions on activities and “emotion” not on specific places. People can shop, dine and engage in cultural and recreational activities in LOTS of places. How is the experience different in Lebanon?
- ❑ Remember who you are talking too in developing the story – the “target audience”.



PAINT A PICTURE | Create the look and feel of the brand

- ❑ Develop the logo, color schemes, fonts, tag lines and all the marketing elements connected with the brand.
- ❑ Make sure the visual expression of the brand aligns with the story and brand promise.
- ❑ Consider how planned physical improvements and land use and transportation decisions intersect with the brand identity. Where in your new downtown can you express yourself the best? How that might be achieved?
- ❑ Gather these pieces into a complete Branding Guide to ensure a cohesive visitor experience throughout the community. Share the guide across all “brand ambassadors” including local businesses, government and community events and organizations. Continuity in messaging is paramount.



COMMUNICATE YOUR BRAND | Develop an implementation and action plan

- ❑ Identify specific actions that can achieve implementation of the brand (website, promotional material, community videos, etc) For each recommendation identify who is responsible for implementation, timing, cost, funding sources and the rational for completing the action.
- ❑ Establish a single entity—like a downtown association—to help manage and coordinate the roll out of the community brand.
- ❑ Be consistent and stay on message – apply the brand in all communications with visitors and residents alike.
- ❑ Stay attuned to how your brand is being received; as questions of visitors and locals. Are you living up to your brand promise? Have things changed that are effecting your brand? If so....take a new look at it.



Appendix

F

Design Guide Strategies

Design Guidelines Strategies

Design guidelines are desirable to help ensure downtown buildings all contribute to the value of surrounding private property and public spaces. In this way, buildings help make downtown as a whole a place of community and economic value that is greater than the sum of its parts. Design guidelines intentionally offer greater flexibility than zoning policy. This flexibility is important, as the different conditions of each site and development program may require that certain design guidelines take priority over others, or may require creative solutions. In any case, development projects should be expected to achieve the intent of the design guidelines, even if their means of doing so varies from recommended solutions.

These design guidelines are organized into the following sections:

- ❑ Street-specific guidelines. These ensure buildings and sites respond to the unique qualities and roles of different streets.
- ❑ General façade design guidelines. These help ensure quality architecture throughout the downtown area.
- ❑ Parking design guidelines. These help ensure that off-street parking in parking lots or structures does not detract from downtown appearance or walkability.

Street-specific guidelines

Downtown streets must serve multiple roles including providing pedestrian and vehicular access, space for bicyclists, appropriate addresses for shops and housing, and parking and service, and all of them must be compatible with one another. To help achieve this goal, existing and new streets should each take on the functions and qualities of one of the street types described below. Each street's type should be reflected in its design and function, as well as the design and function of the buildings, open spaces, and parking lining it.

Retail Priority Street

- ❑ Intent: primary location for retail, other active ground floor uses (such as educational or community use, and active lobbies; office use discouraged), and a safe and inviting pedestrian environment.
- ❑ Streets include: Downtown Mall, Taylor Street within one block of Downtown Mall; Hanover Street from Hough to tunnel.
- ❑ Standards:
 - ❑ *Front facades should form a relatively continuous edge along the sidewalk from building to building, generally located within 10 feet of the property line, or per established convention on the street. Occasional deeper setbacks to create publicly accessible open space are acceptable.*
 - ❑ *Ground floor height should rise 15 to 20 feet, suitable for retail or other active uses. Ground floor level should be flush with or easily accessible from the sidewalk.*
 - ❑ *Large transparent ground floor window areas for retail display or for looking into an actively used space should be integrated into the design of buildings. At least 65 percent of the ground level façade should be transparent glazing.*
 - ❑ *Areas of opaque wall at ground floor level should extend horizontally for no more than 15 feet.*
 - ❑ *Frequent public entrances should be provided, preferably spaced no further apart than 50 feet on average.*
 - ❑ *The façade design should incorporate a horizontal break that distinguishes the ground floor from upper floors and accommodates a horizontal signage zone above ground floor glazing.*
 - ❑ *Tenancing ground floor spaces with retail uses is strongly encouraged.*
 - ❑ *Curb cuts and driveways are strongly discouraged.*



Ground floors should accommodate retail and promote walkability with frequent entrances, large areas of transparent windows, high ceilings and attractive signage.



Address Street

- ❑ Intent: desirable location for retail and other active ground floor uses, as well as office, institutional and residential use. Address streets are relatively well-traveled and prominent, and should thus present an attractive appearance to passersby.
- ❑ Streets include: All segments of Park Street facing Colburn Park; Hanover Street from tunnel to South Park Street; Bank Street; School Street; Court Street; potential new segment of Taylor Street from Court Street to river; Campbell Street; Spencer Street from Campbell Street to Kendrick Street.
- ❑ Standards:
 - ❑ *Front facades should align along a relatively continuous plane from building to building, generally located within 20 feet of the property line, or per established convention on the street. Front yard areas should be landscaped and include front stoops or small porches to provide separation of private living space from the sidewalk.*
 - ❑ *Where retail or other active ground floor use is intended, follow the standards for ground floor height, transparency and entrances listed for Retail Priority Streets above.*
 - ❑ *At least 50 percent of the ground level façade should be trans-parent glazing.*
 - ❑ *Areas of opaque wall at ground floor level should extend horizontally for no more than 20 feet.*
 - ❑ *Curb cuts and driveways are strongly discouraged where access from a service or neighborhood street is possible.*



Properties along address streets should incorporate high quality materials, design and landscaping.



Neighborhood Street

- ❑ Intent: desirable location for occupied commercial and/or residential buildings featuring a regular occurrence of doors and windows, with some flexibility to include service functions
- ❑ Streets include: all other streets in downtown study area not listed above.
- ❑ Standards:
 - ❑ *Front facades should align along a relatively continuous plane from building to building, generally located within 30 feet of the property line, or per established convention on the street. Front yard areas should be landscaped and include front stoops or small porches to provide separation of private living space from the sidewalk.*
 - ❑ *At least 30-40 percent of the façade should be transparent glazing.*
 - ❑ *Areas of opaque wall at ground floor level should extend horizontally for no more than 20 feet.*

Service Street

- ❑ Intent: preferred location for service functions to reduce their presence on Priority Retail, Address and Neighborhood Streets.
- ❑ Streets include: Flynn Street
- ❑ Standards:
 - ❑ *At least 25 percent of the ground level façade should be transparent glazing.*
 - ❑ *Areas of opaque wall at ground floor level should extend horizontally for no more than 30 feet.*
 - ❑ *Curb cuts and driveways are allowed as needed.*



Compact yards, porches and stoops create a comfortable transition between a private residence and the public street. Frequent doors and windows promote safety and sense of identity.



General façade design guidelines

- ❑ In multifamily buildings, individual entrances to ground floor units should be provided where possible, in addition to a primary lobby entrance serving other units.
- ❑ Blank walls exceeding 15 feet in length should be avoided and mitigated by murals or green walls when present.
- ❑ In areas with sloping sidewalks, ground floors should be designed to maximize active pedestrian-scale frontage and minimize blank walls.
- ❑ To prevent a monolithic appearance and promote good scale relationships to a variety of context elements from people to whole street blocks, façades should incorporate modules at a full range of scales from whole building scale to human scale. Bay windows, porches and other changes in the façade plane and/or material are examples of effective ways to introduce a variety of scale modules. In general, these scale modules should be used to emphasize vertical proportions in overall building massing.
- ❑ Façades should include horizontal lines of expression (such as string courses, cornices, window alignments and step-backs, shading devices, etc.) that correspond to the height of adjacent buildings. This is particularly important in helping new buildings relate well to the composition of historic or other significant buildings nearby.
- ❑ Building tops and other skyline elements that rise above context buildings deserve special attention as prominent elements in the public view.
- ❑ The design of signage, awnings, storefronts, window displays and other elements defining retail presence should reinforce local neighborhood and district character. Signage should be especially oriented to pedestrians, such as through use of signs suspended over the sidewalk.

- ❑ Building material selection should emphasize use of high-quality, durable finishes. Along the Downtown Mall and facing Colburn Park, wood siding is discouraged; instead, consider stone, masonry, unpainted metal, glass, burnished block, or cement fiber siding. Use durable and sustainable materials that weather well over time, tolerate winter conditions, and require little maintenance. Durable and long-lasting construction techniques and details should be employed.
- ❑ Use no reflective or darkly tinted glass.
- ❑ Secondary façades (those not facing public streets, parks and plazas) may differ in finish materials from primary façades but must adhere to all other provisions and shall be of similar quality to primary façades.
- ❑ Integrate HVAC and other mechanical equipment unobtrusively into the overall building design. Conceal or screen electrical boxes, transformers, utility meters, dumpsters, and other less attractive utility elements from public view as much as possible.



In multi-family residential buildings, ground floor units should have individual entrances from the street.



Facades of larger buildings should include elements at a range of scales that help transition the overall building down to the size of nearby buildings and people. Variations in material, shape, façade plane, style or other elements can help accomplish this.



Off-street parking

- ❑ Off-street parking should be located and designed to have minimal presence, if any, along streets and other public spaces, particularly Priority Retail Streets and Address Streets.
- ❑ Minimizing parking need in the first place by utilizing existing spaces within easy 1–2 block walking distance to the extent possible, through coordinated parking management and wayfinding.
- ❑ Upper levels of parking structures should also be screened from streets, parks and other public areas with occupied space (such as housing or office space) wherever possible. Any portions of parking structures visible from the street should be designed to architectural standards.
- ❑ Provide clear signage, designed to be visible from moving cars on the street to indicate the presence of off-street parking for retail and cultural uses.
- ❑ Pedestrian access should be prominent, inviting and convenient, making it easy to park once and reach multiple destinations on foot. Pedestrian entrance lobbies to parking structures should have as much visibility from the exterior as possible to promote security. Stair towers and elevators, where adjacent to the street, should be designed with a high degree of transparency. Consider making use of their potential as a strong vertical design element.
- ❑ Where off-street parking is gated, gates and fencing should be designed attractively. Consider incorporating artwork or plantings to enhance appearance.
- ❑ Consider use of pervious paving in surface parking lots wherever possible, such as use of decomposed granite at parking spaces with concrete or asphalt at drive aisles.



Parking structures should be separated from streets (other than Service Streets) by occupied housing or retail space. Exposed upper floors of parking structures should have an architecturally designed façade.



Parking lots should be separated from streets (other than service streets) by occupied buildings where possible. Where parking does adjoin a street, use attractive landscaping, fencing and/or art to reduce its presence.



Appendix

G Survey 1 and 2 Results

Survey 1

DOWNTOWN VISIONING SURVEY

Survey intended to solicit feedback and comments about a variety of topics surrounding the Downtown Visioning Study and Tunnel Project.

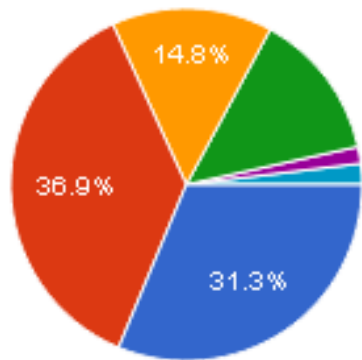
Between Oct. 29, 2015 and Feb. 2, 2016,
the City received

530 Responses
to the survey



DOWNTOWN VISIONING SURVEY RESULTS

1. How often do you visit downtown?

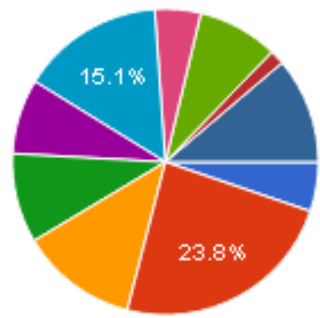


Daily	163	31.3%
Several times a week	192	36.9%
Once a week	77	14.8%
Less than once a week	71	13.6%
Not sure	8	1.5%
Other	10	1.9%



DOWNTOWN VISIONING SURVEY RESULTS

2. When you visit downtown, what is your most frequent reason for doing so?

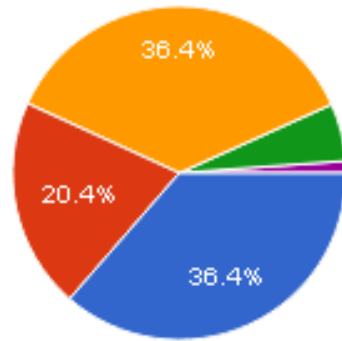


Shopping	27	5.2%
Eating	123	23.8%
Business services (e.g. medical appointment, banking, etc.)	64	12.4%
Working	49	9.5%
To attend civic/arts events (e.g. Farmer's Market, Opera House, AVA Gallery, etc.)	41	7.9%
Recreation (e.g. to access Northern Rail Trail, CCBA, etc.)	78	15.1%
To visit Lebanon library	25	4.8%
Other municipal or governmental services (e.g. City Hall, Post Office, etc.)	44	8.5%
Not sure	8	1.5%
Other	58	11.2%



DOWNTOWN VISIONING SURVEY RESULTS

3. Would you support development of apartment/loft housing on one or more city-owned downtown parking areas, if other convenient parking accommodations could be provided?

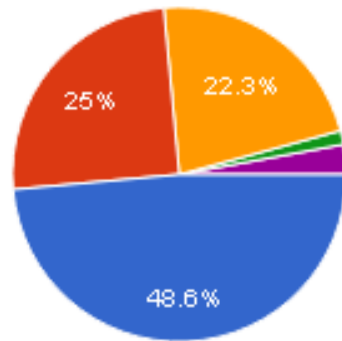


Yes	189	36.4%
No	106	20.4%
Maybe - need to know more	189	36.4%
Not sure	29	5.6%
Other	6	1.2%



DOWNTOWN VISIONING SURVEY RESULTS

4. Would you be willing to park 1-2 blocks away from a downtown destination (post office, restaurant, Colburn Park, etc.) if you could walk to your destination along a prominent, well-lit sidewalk, and cars had to stop at crosswalks?

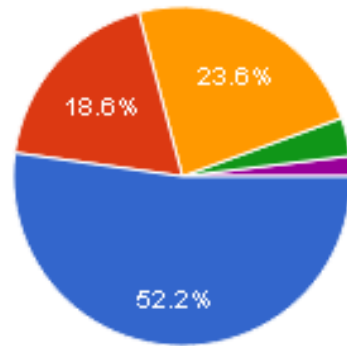


Yes	253	48.6%
No	130	25%
Maybe - need to know more	116	22.3%
Not sure	7	1.3%
Other	15	2.9%



DOWNTOWN VISIONING SURVEY RESULTS

5. Would you tolerate more stop signs and/or traffic signals downtown if they improved safety and convenience of walking and driving?

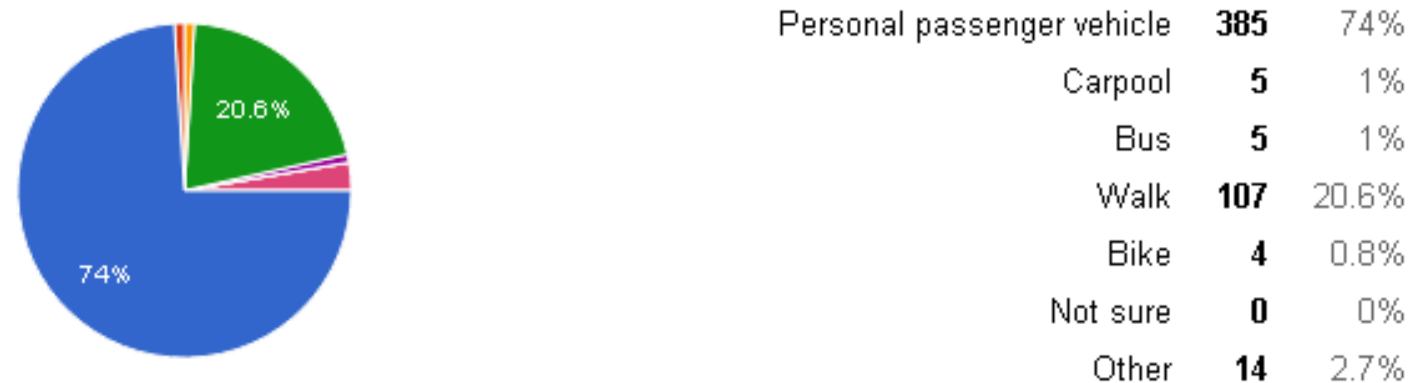


Yes	272	52.2%
No	97	18.6%
Maybe - need to know more	123	23.6%
Not sure	19	3.6%
Other	10	1.9%



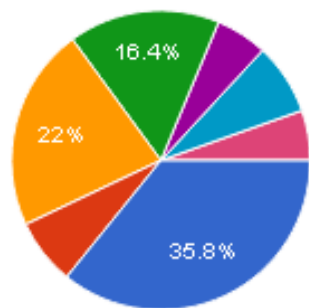
DOWNTOWN VISIONING SURVEY RESULTS

6. When you visit the downtown, what mode of transportation are you most likely to take?



DOWNTOWN VISIONING SURVEY RESULTS

7. Of the following choices, what do you view as the most important mobility issue within the downtown?

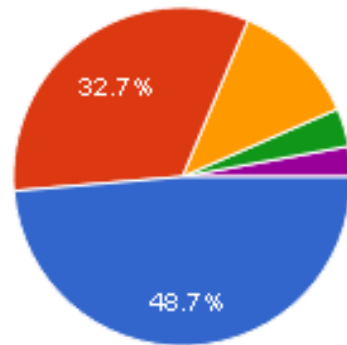


Traffic circulation (congestion, wayfinding)	186	35.8%
Speeding	37	7.1%
Pedestrian Safety	114	22%
Parking	85	16.4%
Bicycle Accomodation	29	5.6%
Not sure	40	7.7%
Other	28	5.4%



DOWNTOWN VISIONING SURVEY RESULTS

8. Would safer, more inviting and direct walking and biking connections between downtown and adjacent neighborhoods make you more likely to walk or bike to downtown area destinations?

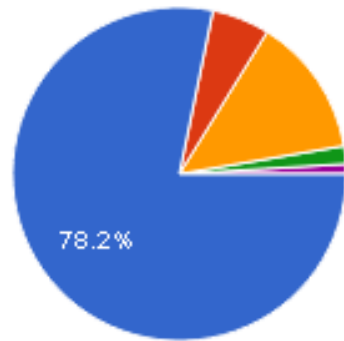


Yes	253	48.7%
No	170	32.7%
Maybe - need to know more	63	12.1%
Not sure	19	3.7%
Other	15	2.9%



DOWNTOWN VISIONING SURVEY RESULTS

9. Would you support creating walks or trails along and/or across the Mascoma River downtown, to celebrate and experience the river as a special part of Lebanon?

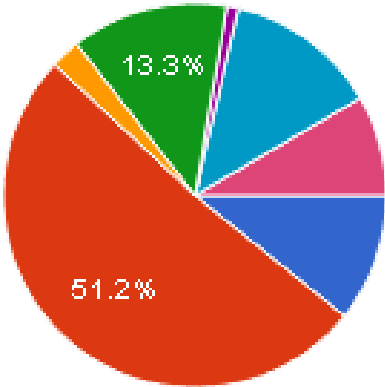


Yes	406	78.2%
No	29	5.6%
Maybe - need to know more	70	13.5%
Not sure	9	1.7%
Other	5	1%



DOWNTOWN VISIONING SURVEY RESULTS

10. Which of the following uses do you think should be expanded in downtown?

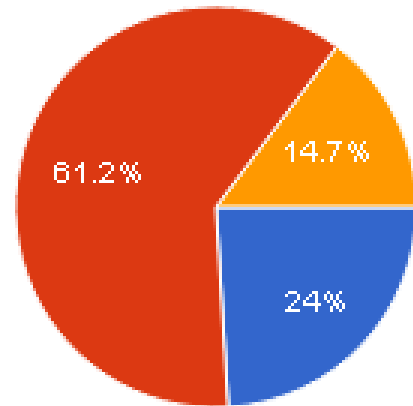


Residential	56	10.8%
Retail	266	51.2%
Office/Service	13	2.5%
Cultural	69	13.3%
Industrial	5	1%
Not sure	67	12.9%
Other	44	8.5%



DOWNTOWN VISIONING SURVEY RESULTS

11. Are you aware of the 2012 Master Plan and the goals and actions recommended for the Central Business District?

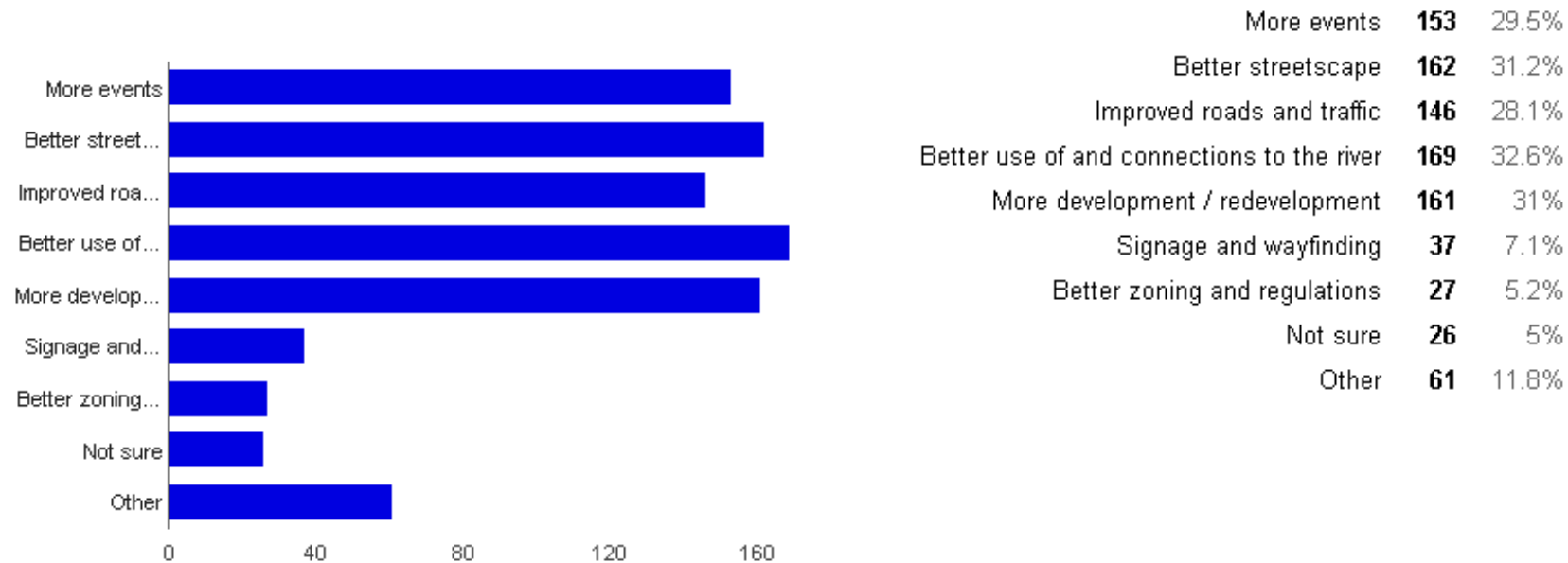


Yes	124	24%
No	316	61.2%
Not sure	76	14.7%



DOWNTOWN VISIONING SURVEY RESULTS

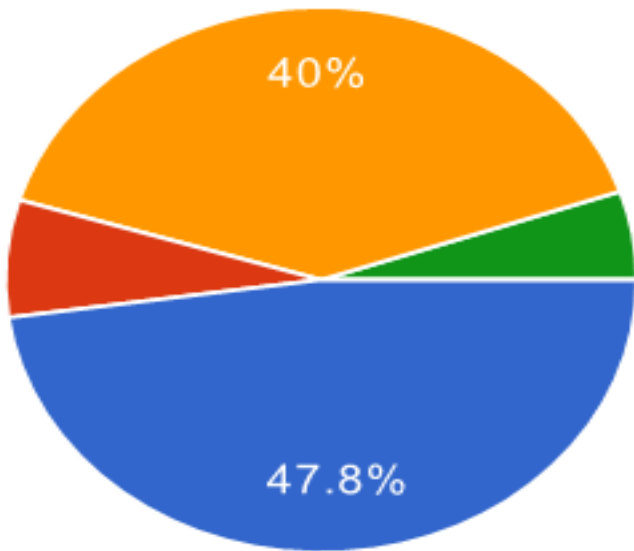
12. What TWO (2) things could make the downtown better?



Survey 2

Q1. Tunnel & Pedestrian Connectivity

Which proposed alternative do you prefer with respect to the TUNNEL and PEDESTRIAN CONNECTIVITY?



Alternative A	227	47.8%
Alternative B	33	6.9%
Alternative C	190	40%
Not sure	25	5.3%



A



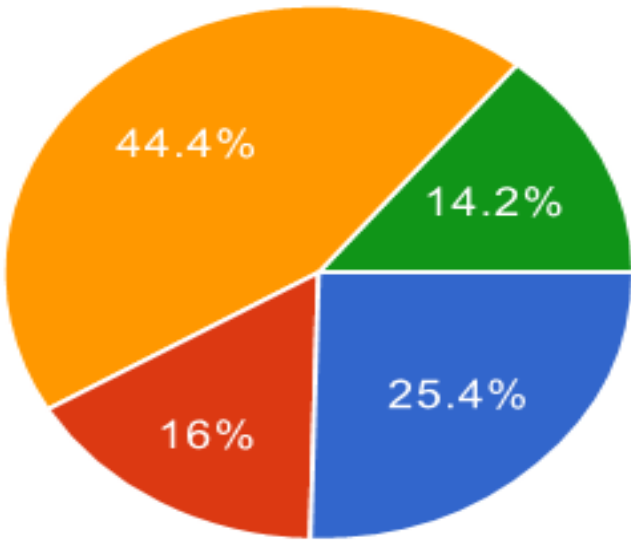
B



C

Q2: Pedestrian Mall

Which proposed alternative do you feel most improves the existing PEDESTRIAN MALL?



Alternative A	122	25.4%
Alternative B	77	16%
Alternative C	213	44.4%
Not sure	68	14.2%



A



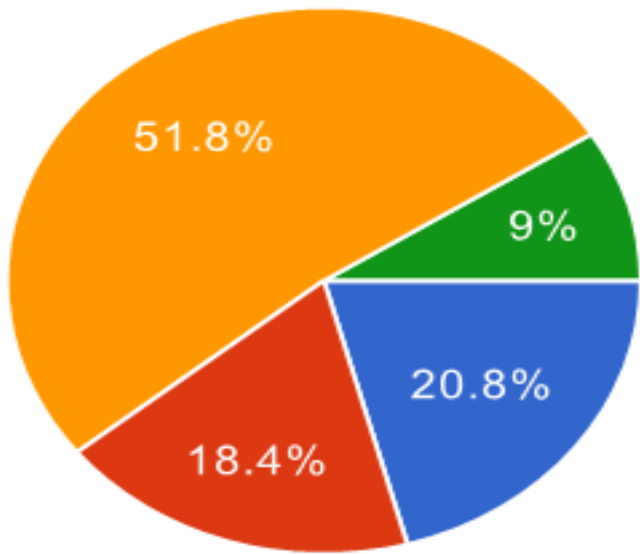
B



C

Q3: Mascoma River

Which proposed alternative provides the best opportunities for highlighting the MASCOMA RIVER?



Alternative A	99	20.8%
Alternative B	88	18.4%
Alternative C	247	51.8%
Not sure	43	9%



A



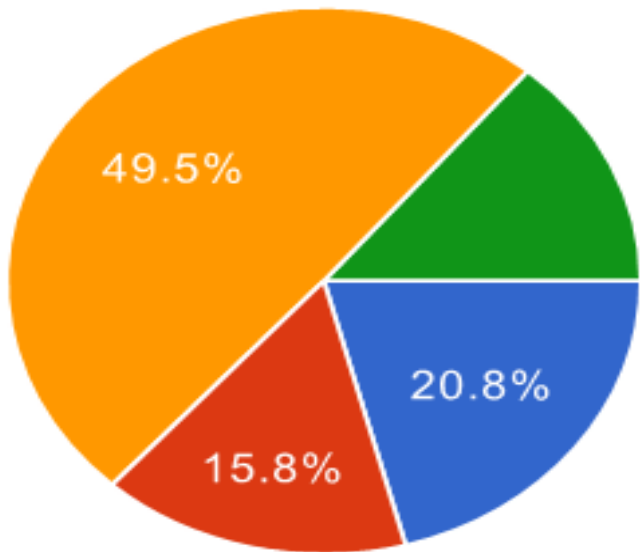
B



C

Q4: Development Opportunities

Which proposed alternative do you feel provides the right amount of DEVELOPMENT OPPORTUNITIES?



Alternative A	99	20.8%
Alternative B	75	15.8%
Alternative C	235	49.5%
Not sure	66	13.9%



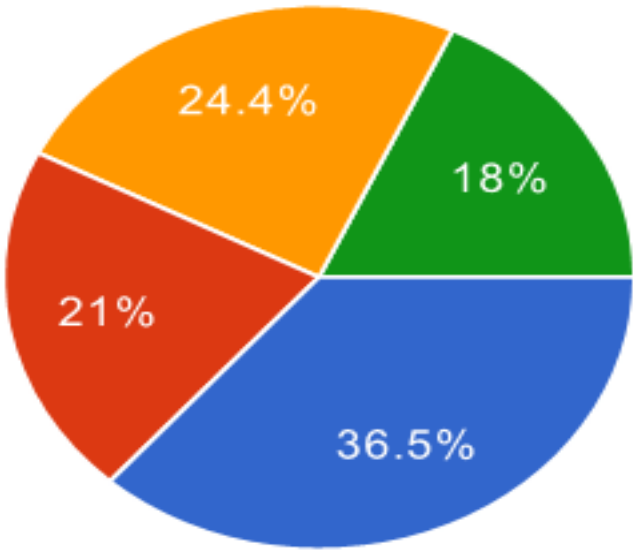
A

B

C

Q5: Colburn Park Traffic

Which proposed alternative do you prefer for traffic around Colburn Park?



Alternative A	172	36.5%
Alternative B	99	21%
Alternative C	115	24.4%
Not sure	85	18%



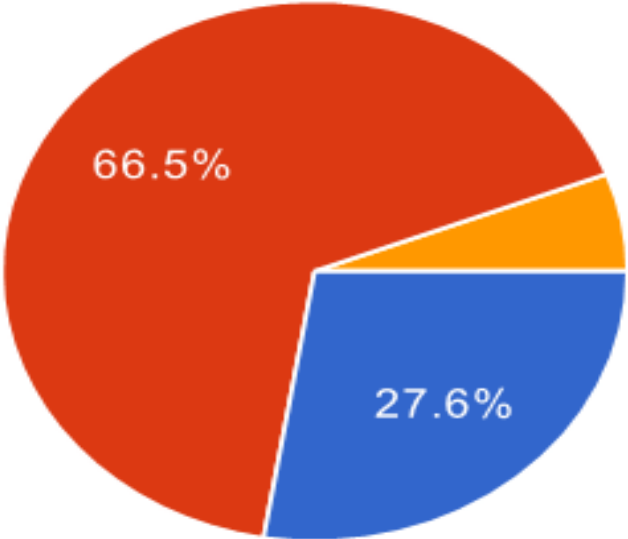
A

B

C

Q6. Hanover St./Route 120 Intersection

Which proposed alternative do you prefer for the intersection of Hanover Street/Route 120?



Alternative A & B	132	27.6%
Alternative C	318	66.5%
Not sure	28	5.9%



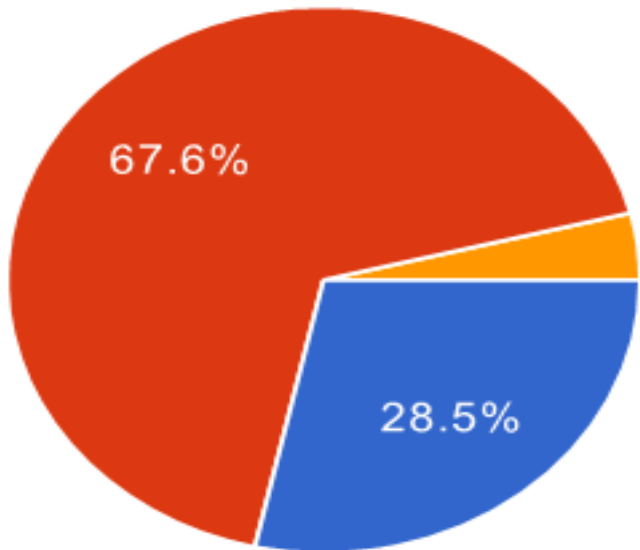
A&B



C

Q7: Hanover Street Streetscape Improvements

Which proposed alternative do you prefer for streetscape improvements along Hanover Street?



Alternative A & B	137	28.5%
Alternative C	325	67.6%
Not sure	19	4%



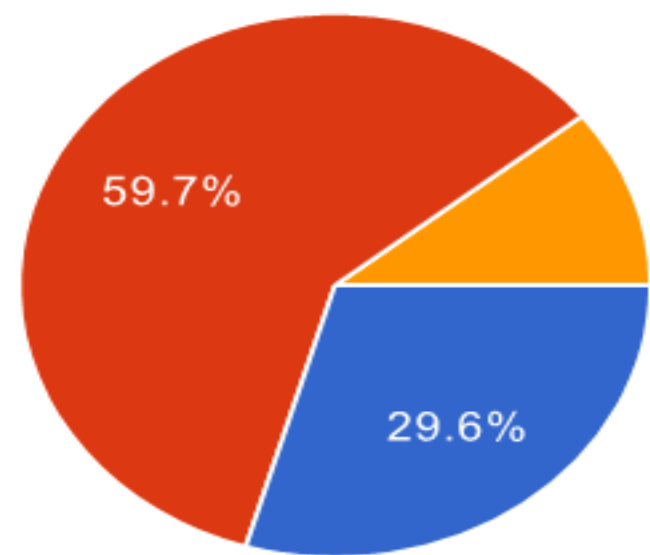
A&B



C

Q8: Hanover Street & High Street Intersection

Which proposed alternative do you prefer for the intersection of Hanover Street and High Street?



Alternative A & B	141	29.6%
Alternative C	285	59.7%
Not sure	51	10.7%



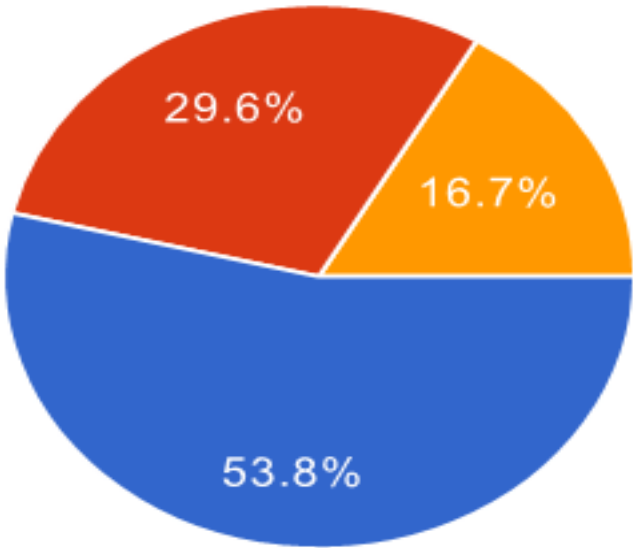
A&B



C

Q9. Spencer Street Development

Which proposed alternative do you prefer for development options along Spencer Street?



Alternative A & B	258	53.8%
Alternative C	142	29.6%
Not sure	80	16.7%



A&B



C