

**Town of Richmond**  
**Planning Commission Meeting**  
**AGENDA**

Wednesday March 4<sup>th</sup>, 2020, 7:00 PM

Planning Commission to be held in the  
Richmond Town Center Meeting Room, 203 Bridge Street, Richmond, VT

1. Adjustments to the Agenda
2. Approval of Minutes
  - July 3, 2019
  - July 17, 2019
  - August 7, 2019
  - February 19, 2020
3. Public comment for non-agenda items
4. Review meeting of Planning Commission and Selectboard members regarding the Jolina Court Zoning District draft regulations (7:10 PM to 7:20 PM)
5. Corrections and modifications to the Village Downtown Zoning District and other pertinent zoning regulations (7:20 PM to 7:40 PM)
6. Regulatory language regarding “Veterinary Clinic” uses (7:40 PM to 7:45 PM)
7. Strategy for Public Outreach (7:45 PM to 8:15 PM)
  - a. Discussion of survey and Town Meeting Day briefing
8. Discuss prioritization strategy for revising the Town zoning regulations (8:15 PM to 8:45 PM)
  - a. Mapping exercise to determine priorities per district
9. Discuss non-zoning priority items
  - a. Items under consideration include: the Town Plan Implementation List, Renewable Energy Siting Standards, Stretch Code, Downtown Designation Program, Certified Local Governance, Affordable Housing bonuses, and Tactical Urbanism standards.
10. Other Business, Correspondence, and Adjournment (8:55 PM)

*The times listed for agenda items are estimations. For additional information and accommodations to improve the accessibility of this meeting, please contact Ravi Venkataraman at 802-434-2430 or at [rvenkataraman@richmondvt.gov](mailto:rvenkataraman@richmondvt.gov)*

TO: Richmond Planning Commission

FROM: Ravi Venkataraman, Town Planner

DATE: February 27, 2020

SUBJECT: Table of Contents

Provided below are a list of agenda items and the respective documents for those agenda items:

2. Approval of Minutes:
  - a. Page 3 (of the PDF): July 3, 2019 Planning Commission Meeting Minutes
  - b. Page 5: July 17, 2019 Planning Commission Meeting Minutes
  - c. Page 6: August 7, 2019 Planning Commission Meeting Minutes
  - d. Page 7: February 19, 2020 Planning Commission Meeting Minutes
4. Review meeting of Planning Commission and Selectboard members regarding the Jolina Court Zoning District draft regulations
  - a. Page 11: Memorandum on the unofficial meeting
  - b. Page 13: The Interim Zoning Regulations for the Jolina Court District
  - c. Page 24: A table listing uses and PM peak hour vehicle trip ends from the ITE Trip Generation Manual, 9th edition
  - d. Page 26: A traffic study that was enclosed with Buttermilk's application for Building 2 in March 2018 (Not included in the hard copy of the packets)
  - e. Page 65: The decision for Building 2, issued in April 2018
  - f. Page 69: The official site plan of the Buttermilk PUD, dated March 30, 2018
  - g. Page 70: Draft regulations for building height, drafted February 25, 2020
6. Corrections and Modifications to the Village Downtown Zoning District and other pertinent zoning regulations
  - a. Page 71: Memorandum on changes to the VDZD draft regulations
  - b. Page 72: VDZD Revised Draft for the 3-4-2020 Meeting
7. Regulatory language regarding "Veterinary Clinic" uses
  - a. Page 78: Language regarding Veterinary Clinics
8. Discuss prioritization strategy for revising the Town zoning regulations
  - a. Page 79: List of possible aspects to use for the mapping exercise
  - b. Page 80: A draft checklist to apply for revising zoning districts
9. Other Business, Correspondence, and Adjournment

## Planning Commission Minutes 7-3-19

Called to Order: 7:01pm

Present: Scott Nickerson, Brian Tellstone, Mark Fausel, Virginia Clarke, Lauck Parke, Chris Granda, Jessica Draper, John Rankin, Marilynne Johnson, Josi Kytte, Brendan O'Reilly

The planning commission opened the hearing and asked for comments. Marilynne said she wasn't impressed with the first Jolina Court building and was generally interested in the project overall. Scott explained that the commission was trying to keep a majority of the content from the interim zoning. Virginia gave a brief background about the project. Scott explained that although they have requested higher density, the draft being presented and discussed only contains the original 15 unit per acre density and that the extra density was being discussed separately as a potential density bonus. Marilynne expressed concern about the traffic. Virginia stated that the town shouldn't cease all development because of traffic, due to the fact that surrounding towns will continue to develop and impact traffic and there is a desire to increase the tax base in Richmond. Scott also explained that the selectboard and staff are working on the issue of traffic and parking in the village, but the state's timeline isn't in Richmond's favor. Marilynne said she thought the traffic should be solved first.

Virginia went through the sections of the proposed zoning document individually. Jessica explained the difference between waivers, variances, and amendments. Brendan and Josi requested that the building height regulation be restored to the 35 feet average height with one building allowed at 38 feet from the interim zoning. Josi said she spoke to Williston fire and found out that they can respond faster than Richmond fire, and they have a 75' reaching ladder truck. Discussion ensued further about building heights. The commission agreed to change it back to the interim zoning allowances.

The commission discussed the list of uses, and that they would leave it up to the subcommittee to rearrange the uses to be compatible with the list of uses in the existing zoning.

Jessica clarified the timeline and adoption process. The commission recapped the 9 proposed changes: removed waiver language, re-write sections H&I to be more clear, change the height restriction, make uses compatible, cut language that only refers to interim zoning statute, make the rounding mechanism universal, alter language regarding CO's for energy standards, reformat, edit parking supply to include more specifics about commercial parking. They agreed that the subcommittee would discuss the density bonus option and uses.

Chris Grand moved to close the hearing, seconded by Brian Tellstone. All were in favor, so moved.

Virginia Clarke moved to approve the proposed zoning as amended and forward it to the selectboard. Mark said he felt as though the planning commission was abdicating their role to

write regulations, and acknowledged that the selectboard obviously already has their own plans for how to change the regulations, but feels like there is something wrong with the system. He said he felt that the subcommittee did not represent the entire commission. Jess said she hoped that this particular regulation was only working out this way because of the unique history. Mark said that it sets a precedent and that he foresaw this happening with future regulations as well.

Scott, Brian, Chris, and Virginia vote in favor. Mark opposed the motion. Lauck abstained. So moved.

Brian moved to adjourn, seconded by Chris Granda. All were in favor, adjourned 9:16pm.

## Planning Commission Minutes

7-17-19

Called to Order: 7:02pm

Present: Scott Nickerson, Brian Tellstone, Joy Reap, Virginia Clarke, Alison Anand, Chris Cole, Chris Granda, Lauck Parke, Mark Fausel, Lars Whitman, Fran Thomas, Betsy Hardy

Virginia gave a brief presentation and overview of the proposed Village Downtown District regulation.

Scott opened the floor for public comment. Fran expressed concern about the parking exemption. Discussion ensued regarding parking supply and how the proposed exemption and parking permit system would work. Fran requested that the parking permit have a policy to accompany it for the road foreman and selectboard to have criteria when approving permits.

The commission decided to remove Motel from the list of uses, alter research laboratory to be laboratory, research or other, change the PUD amendment to say non-residential instead of commercial, amend the word faction to say fraction, amend the density language to be more clear, and change the setbacks to be 0' on all sides except for district boundaries which would require a 5' setback and to also require sidewalks on public road frontage to the public works standards. They also decided to split out residential and non-residential parking requirements, and amend art studio to include musical and theater forms of art.

They also agreed to explore lot coverage reductions for Green Stormwater Infrastructure installations.

Chris Granda moved to exit the hearing. Seconded by Virginia Clarke. All were in favor, so moved.

Virginia moved to approve the regulation as amended. Seconded by Brian. Jessica read the amendments. Mark Fausel expressed concern again for what he feels is relegation of duties to the selectboard because of pressure they put on the commission to pass a regulation on to them. Scott abstained. Mark opposed. All remaining were in favor. So moved.

Virginia moved to amend the PUD alteration to say non-residential instead of commercial. Seconded by Joy. All were in favor, so moved.

Brian moved to adjourn. Seconded by Virginia. All were in favor, adjourned 9:11pm.

Planning Commission Minutes  
8-7-19

Called to Order: 7:01pm

Present: Brian Tellstone, Joy Reap, Scott Nickerson, Virginia Clarke, Chris Cole, Chris Granda, Jessica Draper, Jack Linn

Public Comment: Jack Linn stated that he spoke with someone who owns a financial services business in Colchester, and he wants to move to Richmond but couldn't. Jessica explained that Tim had wanted to move into the first building, but Buttermilk couldn't change their second floor from residential to commercial.

Scheduling Conflicts: The commission proposed to move the next 4 meetings to 9/12, 9/26, 10/16, 10/30, Jessica will follow up with the space availability. Virginia moved to approve the dates. Seconded by Chris Granda. All were in favor, so moved.

Jolina Court Hearing Update: Jessica gave a brief update about the Jolina Court hearing from 8-5-2019. She explained that the hearing was extended to the next meeting, and they will likely finalize changes at that meeting. She also explained that she provided a list of likely changes or topics of change. Discussion ensued about the large point of contention regarding the ratio of commercial to residential. The commission discussed the concerns regarding flexible zoning versus stricter zoning on the Jolina Court parcel.

Discussion ensued about the role of the planning commission, and how communication about zoning proposal purposes can be better translated to the selectboard.

The planning commission agreed to take a formal position on the proposed zoning and submit it to the selectboard. They agreed to support first entirely above-grade floor commercial, allow upper floor flexibility, and not support a final ratio or a per building ratio.

The group decided to table the remaining agenda items to the next meeting to continue discussing Jolina Court. Jessica announced the date and time for the Village Downtown Zoning hearing as 8-27-19 at 7:15pm.

Discussion continued regarding the potential changes that could be implemented by the selectboard on the Jolina Court proposal.

Chris and Virginia offered to write a letter to the selectboard outlining their position on the potential selectboard changes to the draft Jolina Court zoning.

Brian moved to adjourn. Seconded by Joy. All were in favor, adjourned 9:10pm.

## Planning Commission Meeting Minutes 2/19/2020

Called to order: 7:02 pm

Members present: Mark Fausel, Brian Tellstone, Scott Nickerson, Virginia Clarke, Chris Granda, Alison Anand (Chris Cole, Joy Reap, and Lauck Parke were absent)

Staff present: Ravi Venkataraman, Town Planner

Others present: Stefani Hartsfield, Kyle Hartsfield, Miranda Lescaze

### 1. Adjustments to the Agenda

Virginia Clarke recommended adjusting the agenda move up Item #8 to after Item #3, postpone Item #7 to a later meeting, and add an update from the February 18<sup>th</sup> Selectboard meeting.

### 2. Approval of the minutes

Motion by Mark Fausel, second by Scott Nickerson to approve the minutes of the May 22, 2019, June 5, 2019, June 19, 2019, and February 5, 2020 Planning Commission Meetings. Voting: unanimous. Motion carried.

### 3. Public comment for non-agenda items

Stefani Hartsfield talked about the DASH Grant the Town of Richmond received from the Illinois Public Health Institute. She explained that the grant touches upon the Town's future planning priorities, and centers on the allocation of resources. One of the deliverables of the grant is to provide information to the public on existing community engagement and public interest resources. She said the total grant amount is \$5,000. She said of the \$5,000, \$2,000 will be spent on a stipend for a person to follow through on the grant deliverables. She also said that more details on the position is to follow.

Mark Fausel commended Hartsfield's efforts to get a grant as a Richmond citizen unaffiliated with the Town, and asked about staff's role in administering this grant. Venkataraman said that he would be a liaison between the hired person conducting the work and the Town, and would also provide support as needed. Fausel said that the Planning Commission would like to be updated on these efforts, and would like to help in any way.

### 8a. Nomination of an Acting Administrative Officer, per Richmond Zoning Regulations Section 8.1

Venkataraman explained that under any hypothetical dire circumstances, he would need to assume the role of the Acting Administrative Officer, as stated in his job description, until the

permanent Administrative Officer can continue their duties. The Planning Commission's nomination would legitimize this power when triggered.

Motion by Alison Anand, second by Chris Granda to nominate Ravi Venkataraman as the Acting Administrative Officer for the Town of Richmond. Voting: unanimous. Motion carried.

#### Update from the February 18<sup>th</sup> Selectboard meeting

Ravi Venkataraman provided an overview of the Selectboard's discussion of the Jolina Court Zoning District draft regulations. Venkataraman said that the Selectboard expressed concerns about regulations for the building footprint, traffic impacts, and parking. Venkataraman said that the Selectboard decided to hold a public meeting on March 9<sup>th</sup>, but he said he will be talking to the Selectboard until March 9<sup>th</sup> to address their concerns. Clarke asked if anyone from the Planning Commission can address the Selectboard's concerns with Venkataraman. Venkataraman said Planning Commission members can discuss with the Selectboard their concerns. Anand said that the Selectboard wanted additional time to review the revisions made to the regulations since November 2019, and that it was concerned about the building footprint allowance. Clarke said that the Planning Commission should provide a rationale to the Selectboard. Anand added that the Selectboard was concerned about the capacity of the Fire Department.

Venkataraman suggested providing the Selectboard with a document vetted by the Planning Commission that reviews their rationale for their decisions. Venkataraman also said that individual Planning Commission members are welcome to join in on the meeting with the Selectboard. Chris Granda and Mark Fausel expressed interest in attending the meeting. Clarke suggested that Venkataraman look into Open Meeting Laws.

#### 4. and 5. Future priorities, and Objectives and communication strategy for public input

Clarke said that the Planning Commission should determine a methodology to address the list of priorities and rewriting the zoning ordinance. Clarke suggested reviewing the zoning ordinance on a district-by-district basis, either by working from the center outward, or based on public input. Clarke also suggested creating a checklist in order to evaluate each district.

Venkataraman said that the commission may want to reevaluate the location and boundaries of all the districts so that the commission can map out long-term growth and development. Venkataraman said that the lines currently do not match parcel boundaries and the districts and respective individual parcels may not align with the aspired zone on the transect. Venkataraman said that the commission could create a working zoning map, then reevaluate each location and respective district, and merge the working map with the zoning ordinance when the ordinance is finalized—especially if a reevaluation of the growth boundaries are necessary. Venkataraman said if the commission is satisfied with the current zoning map, then starting from the center and moving outwards would be the logical next step. Anand said that looking at the town from a wider lens is a good approach.

Clarke asked why the zoning map could be changed incrementally as the commission reviews each district. Venkataraman said that can be possible. Clarke said she was concerned about the commission's ability to review an entire zoning map.

Anand raised concerns about long driveways and impacting natural resources with land development.

Fausel said that the Town Plan has an existing working map and creating a new zoning map would be difficult. Fausel said that the commission should refer to the Town Plan map when reviewing each zoning district.

Fausel said that providing a status update on the Planning Commission's progress during Town Meeting Day would be a great opportunity. Fausel said that the Planning Commission should gain input from the public on how they should prioritize their workflow, including their revision of the zoning ordinance.

Clarke said that the commission already has a list of priorities—one of them being revisions to the Village Downtown Zoning District regulations. Clarke said that the commission should address the priority of revising the zoning ordinance.

Anand said that by seeking input, the commission would become aware of problems that they can address by modifying the zoning regulations.

Clarke said that Venkataraman had the idea of developing an online and in-person survey to get public input. Venkataraman said that the commission could inform the town of the Planning Commission's status and the survey during Town Meeting Day. Fausel said that the Planning Commission should have a more structured public outreach component.

Clarke suggested that the commission should spend 75 percent of their meetings focused on zoning going forward, and should approach their revision to the regulations in a particular systematic manner. Clarke said that asking the town a general question about the zoning will not be directed or constructive. Granda said structure and direction with public outreach is necessary in order to get the type of answers the commission wants. Clarke asked the commission if it should advertise the survey during Town Meeting Day. The commission said it should.

Venkataraman said that there are projects and initiatives he would like to work on with the Planning Commission's support. Venkataraman said he would like to work on addressing affordable housing with inclusionary zoning provisions. Fausel said that the commission should define density bonus provisions, not only for affordable housing but also for natural resource protection and other aspects. Venkataraman also suggested putting in place additional PUD standards to protect core forests, prime agricultural lands and other natural resources, as well as transferring development rights. Venkataraman said he would like to pursue a state

Downtown Designation. Venkataraman said he would like to look into establishing a Design Review District. Anand said the commission had considered design review specifications but did not pursue it at the time. Venkataraman also said he would like to establish Tactical Urbanism standards for the town. Venkataraman suggested that the commission should look into integrating elements of SmartCode into the zoning regulations.

Fausel said he would like the commission to be more involved with what is happening on Bridge Street during this summer. Clarke said the town has a transportation commission. Fausel said he would like updates on the transportation commission.

#### 8. Other Business, Correspondence, and Adjournment

Clarke said that for next meeting, the commission should focus on which items it and staff should pursue.

Motion by Tellstone, second by Scott Nickerson, to adjourn. Voting: unanimous. Motion carried.

The meeting adjourned at 8:47 pm.

TO: Richmond Planning Commission

FROM: Ravi Venkataraman, Town Planner

DATE: February 27, 2020

SUBJECT: Summary of February 25, 2020 meeting with Selectboard

On February 25, 2020, certain Planning Commission members and certain Selectboard members had met to address concerns regarding changes to the Jolina Court Zoning District draft regulations. The public meeting for the Jolina Court Zoning District regulations is scheduled for March 9, 2020 at 7 pm. No quorum of either public body was in attendance. The meeting was informational and neither public body conducted any Town business that would impact the future of the Town. However, I should disclose that the following items were provided to the Selectboard and Planning Commission members in attendance:

- The Interim Zoning Regulations for the Jolina Court District
- A table listing uses and PM peak hour vehicle trip ends from the ITE Trip Generation Manual, 9th edition
- A traffic study that was enclosed with Buttermilk's application for Building 2 in March 2018
- The decision for Building 2, issued in April 2018
- The official site plan of the Buttermilk PUD, dated March 30, 2018

The aforementioned items are enclosed in your packet.

The following people attended the meeting on February 25, 2020:

- Roger Brown, Selectboard member
- Katie Mather, Selectboard member
- Chris Cole, Planning Commission member
- Chris Granda, Planning Commission member
- Mark Fausel, Planning Commission member
- Josh Arneson, Town Manager
- Ravi Venkataraman, Town Planner
- Jerry Levesque, Richmond Fire Department
- Brad Yeates, Richmond Fire Department

During the unofficial meeting with the two Selectboard members, the following concerns were discussed:

- Height restrictions and the Richmond Fire Department's ability to provide emergency services
- Language regarding traffic impacts
- Building footprint limitations

After our discussion, we arrived at the following possible solutions to the Selectboard's concerns about building height:

- Jerry Levesque and I proposed requiring all applicants for Conditional Use and Site Plan Review to meeting with the Fire Department, and all Conditional Use and Site Plan Review applications to include a review letter from the Richmond Fire Department. The draft language would require the DRB to take into consideration the review letter in its review. To note, in the current zoning regulations, PUDs in all districts are Conditional Uses, and all uses that are not single- and two-family dwellings require Site Plan Review. Therefore, the draft regulation would cover the commercial buildings that are exempt from

the Vermont Division of Fire Safety's review. With this modification, I suggested modifying Sections 4.12.3 and 4.12.4 to only apply to single-family and two-family dwelling uses. The draft language for this is enclosed.

This item will be further discussed during the Selectboard's public hearing. I plan to distribute copies of the enclosed draft language to the Selectboard. Other discussion points the Selectboard may cover during the March 9<sup>th</sup> meeting include:

- Traffic Impacts – the main discussion was about whether to limit land development to 70 vehicle trip ends (as presented in the draft regulations for the district in November)
- Building Footprint – the discussions were about the difference in impact of a 8,000-square-foot building footprint and a 10,000-square-foot building footprint, the potential for multiple buildings with a 10,000-square-foot building footprint, and methods to limit the number of buildings in the PUD with 10,000 square feet.

## Jolina Court Interim Zoning District

Adopted May 2014, Amended September 2015

*SB approved May 5, 2014, amended Sept 28, 2015  
I. Area & Rationale extended for one more year May 2016.  
Expired May 2017*

These interim zoning regulations shall apply to three parcels on Jolina Court (the Jolina Court Interim Zoning District), the 5.84-acre parcel (JC0074), the 0.16-acre (BR0125) parcel and the 0.10 acre parcel (JC0013). These parcels were in the Village Commercial zoning district.

The Richmond Selectboard hereby adopts the following interim zoning for the Jolina Court Interim Zoning District, pursuant to VSA Title 24, Chapter 117, Section 4415 (Interim Bylaws). The Richmond Selectboard shall review applications under this interim zoning.

Interim zoning for this area is necessary to provide for orderly physical and economic growth, given that the Casing property, the 5.84-acre parcel (JC0074), was the main driver of water and sewer infrastructure for the village water system and has sat vacant for over 15 years, and given that a nonprofit has partnered with the owner to facilitate environmental cleanup and a development plan that is an essential component of that project. The Richmond Selectboard has formed a special steering committee (Committee to Examine Zoning on Jolina Court/Interim Zoning Committee) to conduct studies on redevelopment options and more permanent zoning solutions for this portion of Richmond's village area. During the course of its work, the steering committee has heard from interested local parties as well as possible site developers. The steering committee has developed a vision/purpose statement for this area, Interim Zoning, and is currently working with the Planning Commission to develop permanent zoning based on this vision and community feedback.

### II. Purpose

The purpose of the Jolina Court Interim Zoning District (IZD) is to provide a location within the existing village core area for employment, light industry, commercial uses, community gathering space, housing, and other compatible uses that bring value to the community and maintain Richmond's unique sense of place. There are 2 primary goals for the IZD:

1. Help restore and improve the economic vitality of Richmond's state-designated village center by attracting desirable new businesses to the site, restoring jobs and water revenue.
2. Consistent with Richmond's historic connections to its working landscape, re-envision the overall site's potential to enhance Richmond to better attract residents and visitors to our village hub for community and commercial activities.

Any development in this district shall enhance the overall village growth area, and shall be compatible with the surrounding mix of residential, non-residential, and municipal uses. A key function of this district remains employment and economic development; however, the former commercial zoning designation has changed, and a mixed-use development plan is now allowable to ensure that other

important and compatible uses are included. Any redevelopment proposal shall fit into the vision for Richmond's larger village growth area as described in section III.

### III. Special Standards

Multiple uses of the property in the Interim Zoning District are allowed, and development densities should be maximized to the extent practical in order to better realize Richmond's overall "smart growth" strategy for the village-designated area.

Development shall be proposed and reviewed by the Selectboard as a Planned Unit Development (PUD). While phasing, subdivision and other innovative ownership arrangements are possible, a master plan for the overall property will ensure orderly redevelopment. The master plan may show future/conceptual components or phases, shall be a well-researched, detailed, and unified treatment of the entire property. The master plan shall at minimum include details on existing and future infrastructure (e.g., roads, sidewalks, water, sewer, gas, and other utilities) as well as shared facilities, shared parking, necessary cross-lot/building easements for both the subject property and the area immediately surrounding the development. The master plan shall address both short and long term traffic impacts and needs (vehicular, pedestrian, bicycle) based on proposed uses and future phases to the extent reasonable (i.e., some future forecasting expected). The Selectboard shall apply the process in Section 5.12 of the Richmond Zoning Regulations, substituting (1) the Selectboard for the DRB, and (10) Conditional Use Review under this Interim Zoning regulation for review under zoning regulation 5.6.

Additionally, all land development shall be reviewed as a conditional use under 24 V.S.A. 4415 (d) or (e). The Selectboard shall review and issue a final decision after the application is presented at a Selectboard hearing.

### IV. Special Conditions and Development Standards

In addition to the standards in 24 V.S.A. Section 4415 (d) and (e) the following shall apply. These standards shall be the main requirement for all development of the Jolina Court Interim Zoning District. Existing zoning regulations incorporated by reference into these interim zoning regulations may be altered or modified as explained below. In the case where there is a conflict, the standards here will apply.

#### Developable Area:

A Jolina Court Interim Zoning District totals 6.10 +/- acres. Areas of a lot shall be deemed incapable of supporting land development are listed with section 2.5.2 of the Richmond Zoning Regulations. Therefore it has been determined that the developable area of the Interim Zoning District is 3.09 +/- acres (2.83 acres + 0.16 acres + 0.10 acres. )

#### B Residential Density:

Maximum Residential Density = 15 units per acre

**C Setbacks:**

1. Interior Parcel (JC0074):

Front Yard Set Back: All parcels fronting on Jolina Court, which exists currently as an unsurveyed private access, have no minimum front yard setback.

Side Yard Set Back and Rear Yard Set Back: (See attached copy of survey with letters depicting sides.)

- A, B: Principal and Accessory Structures: 5' (Adjoiner: RR ROW)
- C, D1, D2: Principal and Accessory Structures: 10' (Adjoiners: Peet & TNC)
- E1, E2, F, G: Principal and Accessory Structures: 20' (Due to Residential / Town Center use; Adjoiner: Dwire, Town Center and eastern side to Town Cemetery)
- H: Principal and Accessory Structures: 10' (Adjoiner: northeastern side of Town Cemetery)
- I.: Principal and Accessory Structures: 5' (Adjoiner: Northern side of Town Cemetery)

2. Parcels with Frontage on Bridge Street (BR0125 and JC0013)

Front Yard Set Back: Principal and Accessory Structures have a 15 feet minimum.

Side Yard Set Back and Rear Yard Set Back: Principal and Accessory Structures have a 5 foot minimum.

**D Dimensional Standards:**

- Minimum Lot Size: ¼ Acre
- Minimum Lot Frontage: N/A
- Minimum Lot Depth: N/A
- Maximum Lot Coverage: 80% of developable area

E Waivers to the above dimensional standards are possible during PUD review.

Maximum building height: one building may be 38 feet maximum height from ground to eaves. Additional buildings may not exceed 35 feet in height. Existing section 6.6 Taller Structures will continue to apply to development under these interim zoning regulations. There shall be no deviation from this standard unless Developer

willing to compensate 100% the Town any cost associated with any fire fighting equipment or structures to house equipment to fight fires with the development that is being proposed per ISO standards so there is no cost what so ever to the tax payers.

**F Parking and Loading:**

1. Location – all required parking spaces shall be provided on the same lot as their related use.
2. Loading Space Size – all loading spaces should be sufficient in size to allow necessary movement without encroaching upon public right of way, parking spaces or internal parking lot circulation recommended size 15 feet wide by 25 feet in length.
3. Loading spaces may service more than one business.
4. Passenger vehicle spaces should be sufficient in size to allow necessary movement in and around the site, following accepted sizing for perpendicular, angled or parallel.
5. Surface - all surfaces outside of the Flood Hazard Overlay District shall be paved.
6. Parking areas may be permitted within the Flood Hazard Overlay District. There shall be no parking areas within the mapped Floodway.
7. Drainage- All parking areas and associated roadways should be designed and constructed with Detention devices.
8. All parking spaces will have a recommended width of nine feet and length of eighteen feet.
9. Parking for Persons with Disabilities- All parking areas shall provide for persons with disabilities required by Title 21 V.S.A Section 275.
10. Setbacks- All parking areas shall meet the setback standards identified within these interim zoning regulations.
11. Pedestrian access- Designs of parking lot shall incorporate measures to minimize safety hazards to pedestrians.
12. Bicycle access-Parking lots should be designed to accommodate bicycle access.
13. Striping- Surfaced parking shall be striped.
14. Traffic control signs- signs necessary to direct traffic flow shall be used.
15. Lighting – see lighting requirements.
16. Fire lanes- fire lanes shall be provided as required and receive a recommendation by fire chief.

Parking Pattern	Minimum one way aisle width	Minimum two aisle way width
90% perpendicular	20 ft.	25 ft.
60% angle	18 ft.	25 ft.
45% angle	16 ft.	25 ft.
30% angle	14 ft.	25 ft.
Parallel	12 ft	20 ft.

**G Noise:**

The existing noise regulations included in the Richmond Zoning Regulations Section 4.10 Noise shall apply, with the following modifications:

Section 4.10.1 shall apply to both Residential and all non-Residential uses.

Section 4.10.2 shall be deleted for the purpose of Interim Zoning.

Live performances and outside activities associated with non-Residential uses shall be prohibited between the hours of 10:00 PM and 7:00 AM.

**H Exterior Lighting:**

The existing Exterior Lighting regulations included in the Richmond Zoning Regulations Section 4.11 Exterior Lighting shall apply, with the following modifications:

4.11.6 Lighting of Gasoline Station Aprons and Canopies shall be deleted for the purpose of Interim Zoning.

**I Performance Standards:**

The existing Performance Standards regulations included in the Richmond Zoning Regulations Section 5.6.3 Performance Standards shall apply, with the following modifications:

Sections 5.6.3(a) Sounds and 5.6.3(b) Exterior Lighting shall not apply and instead the regulations listed in this interim zoning measure shall apply.

5.6.3(d) Odors shall not apply for the purposes of interim zoning.

**J Flood Hazard Overlay District:**

Land development within the Flood Hazard Overlay District must meet the provisions of Section 6.8 of the Richmond Zoning Regulations.

**K Shoreline Protection Overlay District:**

Land within 50 ft. of a shoreline must meet the provisions of 6.7 Shoreline Protection Overlay District of the Richmond Zoning Regulations.

## V Uses:

A All land development shall be reviewed by the Selectboard as a Planned Units Development and as conditional use. Furthermore, uses other than those listed below may be authorized by the Selectboard pursuant to VSA Title 24, Chapter 117, Section 4415d.

Development shall be proposed and reviewed as a Planned Unit Development (PUD). While phasing, subdivision and other innovative ownership arrangements are possible, a master plan for the overall property will ensure orderly redevelopment and include thoughtful provisions of public and private infrastructure, such as roads, sidewalks, utilities, water and sewer, and shared facilities, such as parking, alternative transportation routes, and public areas.

B Mixed use development is an allowable use. All mixed use proposals shall include uses which are compatible. All mixed use projects shall a residential to commercial floor area ratio of 40% residential to 60% commercial. In the case of a multi-structure development, this ration shall be calculated for the development site as a whole rather than for each structure individually.

Any development proposal which is 100% residential will be prohibited.

C Conditional uses may include such things as:

- Arts/Crafts Studio
- Bank
- Brewery, Pub, and/or Tavern
- Catering Service
- Commercial Light Industrial, particularly bringing value to local and regional agriculture
- Cooperative Work Space
- Educational Facility
- Food Processing Establishment
- Hotel , Inn or Guest House
- Light manufacturing
- Medical Offices
- Museum
- Business Offices
- Personal Services
- Pharmacy
- Recreational facility, outdoor or indoor
- Religious Use
- Residential
- Residential dwelling on 2nd and 3rd story of commercial structures
- Research laboratory
- Restaurant
- Retail shops, stores, and service establishments
- Retirement Housing
- State and community facilities
- Theater

- Wholesale Trade

The Selectboard may, upon application, authorize the issuance of permits for other uses, not otherwise described above in the Interim Zoning upon a finding that the proposed use is consistent with the health, safety, and welfare of the municipality and the standards contained in the Interim Zoning.

In making a determination under these Interim Zoning Regulations, the Selectboard shall consider the proposed use with respect to all of the following:

- The capacity of existing or planned community facilities, services or lands;
- The existing patterns of uses of development in the area;
- Compatibility with the surrounding mix of residential, non-residential, and municipal uses;
- Environmental limitations of the site or area and significant natural resource areas and sites;
- Municipal plans and other municipal bylaws, ordinance, or regulations in effect.

**D Additional recommendations and considerations:**

The Selectboard shall determine that adequate parking is provided, and may apply the following standards:

Recommended number of off-street parking spaces

<u>Land use\ Building type</u>	<u>Recommended parking spaces</u>
Bank	2 per 1000 sq. ft.
Bank with drive up	1.5 per 1000 sq. ft.
Bowling alley	2 per lane
Church/Synagogue/Conference area	.25 per seat or 15 linear inches of bench
Cleaners	1 per 1000 sq.ft.
Eating and drinking establishment	15 per 1000 sq. ft.
Drive-through Facility	2 per window
Fast food restaurant	10 per 1000 sq. ft.
Furniture store	2 per 1000 sq. ft.
Hardware store	2 per 1000 sq. ft.
Hospital/clinic	1 per bed
Hotel or motel	1 per room
Industrial park	1 per 1000 sq. ft.
Laundromat	4 per sq. ft.
Museum	3 per 1000 sq. ft.
Nursing Home	.25 per sq. ft.
Personal Service	2 per sq. ft.
Professional office	3 per 1000 sq. ft.

Retail Sales	2 per 1000 sq. ft.
Senior Citizen Center	6 per 1000 sq. ft.
Shopping Center	3 per 1000 sq. ft. + 8 spaces/ 1000 sq. ft. food service. Off- site employee parking may allow 15% reduction
Sports club\ health spa	4 per 1000 sq. ft.
Warehouse	.25 per 1000 sq. ft.
Bed and Breakfast	1 per sleeping room + 2 per dwelling
Boarding house	1 per sleeping room
Child care home	2 per dwelling + 1 per nonresident employee
Retirement Community	.5 per dwelling unit or other sleeping room
Home occupation	2 per dwelling unit + 1 per nonresident employee
Multi-family (3 or more units)	2 per dwelling + 1 guest space per each 10 units
Single family, two family or triplex	2 per unit

Development plans shall attempt to provide creative alternatives to traditional car ownership, including pedestrian and bicycle paths and Zipcar or Car Sharing stations.

#### E Energy Efficiency

It is recommended, but not required, that all new residential dwellings (including modular homes but not accessory apartments) be designed and built to meet the most up-to-date version of Efficiency Vermont's "Energy Code Plus" standard (or equivalent as the program evolves or is re-named), with the exception of those dwelling types that meet the Vermont Residential Building Energy Standard (RBES) exemptions (e.g., mobile homes, owner/builder special provision, etc.). Even with such exceptions, all construction projects are encouraged to build to energy standards that exceed the statewide minimum, such as Energy Code Plus and Energy Star.

#### VII Zoning Permit Requirements

Within six (6) months after Selectboard Conditional Use Approval under these Interim Zoning Regulations, the holder of the approval shall apply for a zoning permit under Section 5.2 of the Interim Zoning Regulations, or the Selectboard approval shall be deemed void. Richmond Zoning Regulations Section 5.3 shall apply following issuance of the zoning permit.

Bridge Street

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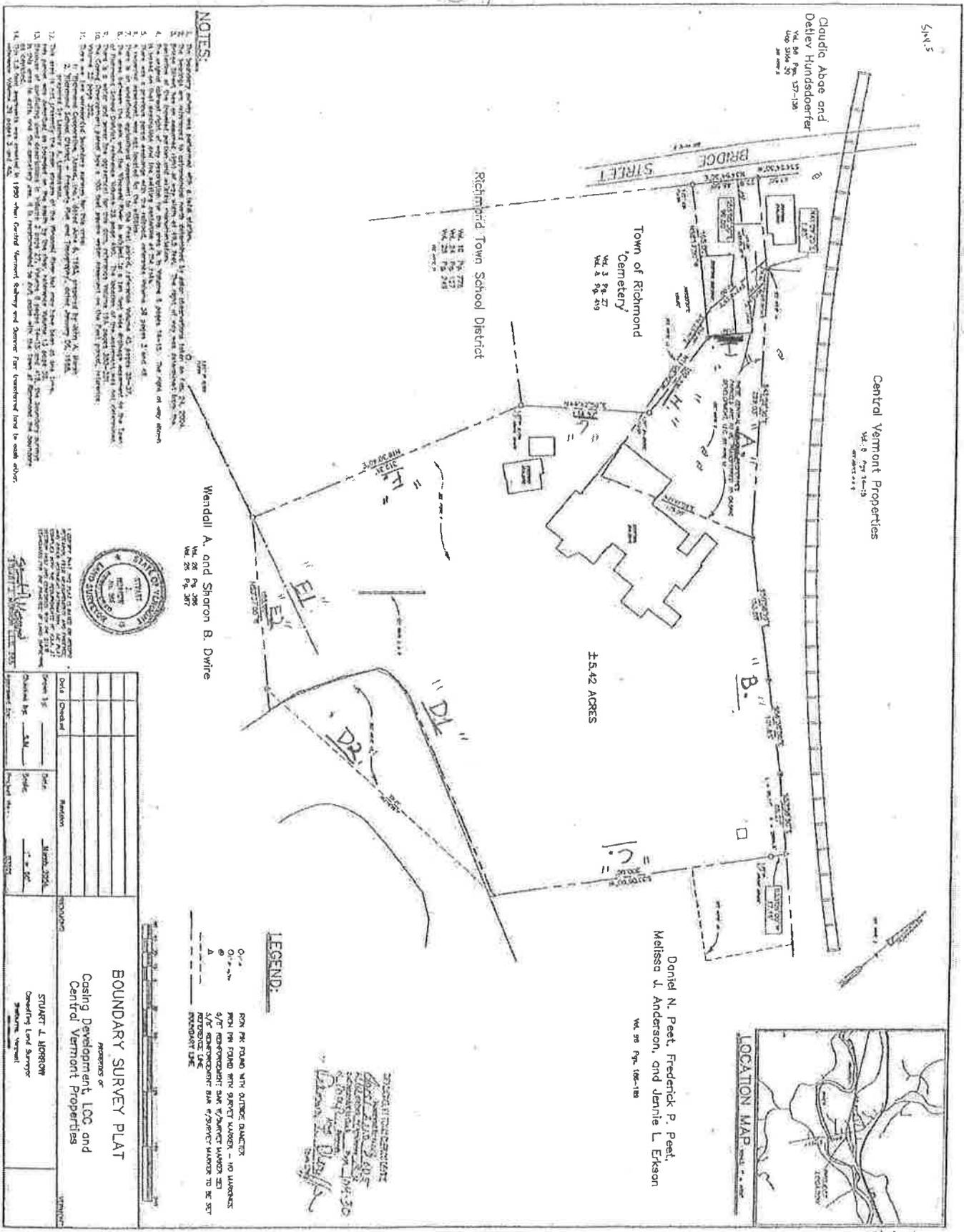
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**Jolina Court Interim Zoning District**  
**Adopted May 5, 2014**



*Ch. Fay*



Claude Abbe and  
Dalev Hundsdoerfer  
Vol. 80 Pgs. 127-136  
Map 3006 20  
as amended

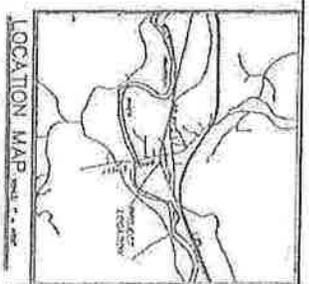
Central Vermont Properties  
Vol. 8 Pgs. 14-15  
as amended

Town of Richmond  
'Cemetery'  
Vol. 2 Pgs. 27  
Vol. 2 Pgs. 28  
Vol. 2 Pgs. 29

Richmond Town School District  
Vol. 10 Pgs. 271  
Vol. 24 Pgs. 137  
Vol. 24 Pgs. 248  
as amended

Wendell A. and Sharon B. Dwire  
Vol. 28 Pgs. 205  
Vol. 28 Pgs. 207

Daniel N. Peet, Frederick P. Peet,  
Melissa J. Anderson, and Jennie L. Eason  
Vol. 28 Pgs. 186-188



**LEGEND:**

- 0" = 1" FOR PAVE ROAD WITH OUTSIDE DRAINAGE
- 0" = 1" FOR PAVE ROAD WITH DRAINAGE
- 1/2" = 1" FOR UNPAVED ROAD WITH DRAINAGE
- 1/4" = 1" FOR UNPAVED ROAD WITH DRAINAGE
- 1/8" = 1" FOR UNPAVED ROAD WITH DRAINAGE
- 1/16" = 1" FOR UNPAVED ROAD WITH DRAINAGE
- 1/32" = 1" FOR UNPAVED ROAD WITH DRAINAGE
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# INSTITUTE OF TRANSPORTATION ENGINEERS COMMON TRIP GENERATION RATES (PM Peak Hour)

(Trip Generation Manual, 9th Edition)

Code	Description	Unit of Measure	Trips Per Unit
<b>PORT AND TERMINAL</b>			
30	Truck Terminal	Acres	6.55
90	Park and Ride Lot with Bus Service	Parking Spaces	0.62
<b>INDUSTRIAL</b>			
110	General Light Industrial	1,000 SF	0.97
120	General Heavy Industrial	Acres	2.16
130	Industrial Park	1,000 SF	0.85
140	Manufacturing	1,000 SF	0.73
150	Warehousing	1,000 SF	0.32
151	Mini-Warehouse	1,000 SF	0.26
152	High-Cube Warehouse	1,000 SF	0.12
170	Utilities	1,000 SF	0.76
<b>RESIDENTIAL</b>			
210	Single-Family Detached Housing	Dwelling Units	1.00
220	Apartment	Dwelling Units	0.62
221	Low-Rise Apartment	Dwelling Units	0.58
230	Residential Condominium / Townhouse	Dwelling Units	0.52
240	Mobile Home Park	Dwelling Units	0.59
251	Senior Adult Housing - Detached	Dwelling Units	0.27
252	Senior Adult Housing - Attached	Dwelling Units	0.25
253	Congregate Care Facility	Dwelling Units	0.17
254	Assisted Living	Beds	0.22
255	Continuing Care Retirement Community	Dwelling Units	0.16
<b>LODGING</b>			
310	Hotel	Rooms	0.60
320	Motel	Rooms	0.47
330	Resort Hotel	Rooms	0.42
<b>RECREATIONAL</b>			
411	City Park	Acres	0.19
412	County Park	Acres	0.09
413	State Park	Acres	0.07
415	Beach Park	Acres	1.30
416	Campground / Recreation Vehicle Park	Camp Sites	0.27
417	Regional Park	Acres	0.20
420	Marina	Berths	0.19
430	Golf Course	Acres	0.30
431	Miniature Golf Course	Holes	0.33

Code	Description	Unit of Measure	Trips Per Unit
432	Golf Driving Range	Tees / Driving Positions	1.25
433	Batting Cages	Cages	2.22
435	Multi-Purpose Recreational Facility	Acres	5.77
437	Bowling Alley	1,000 SF	1.71
441	Live Theater	Seats	0.02
443	Movie Theater without Matinee	1,000 SF	6.16
444	Movie Theater with Matinee	1,000 SF	3.80
445	Multiplex Movie Theater	1,000 SF	4.91
452	Horse Race Track	Acres	4.30
454	Dog Race Track	Attendance Capacity	0.15
460	Arena	Acres	3.33
473	Casino / Video Lottery Establishment	1,000 SF	13.43
480	Amusement Park	Acres	3.95
488	Soccer Complex	Fields	17.70
490	Tennis Courts	Courts	3.88
491	Racquet / Tennis Club	Courts	3.35
492	Health / Fitness Club	1,000 SF	3.53
493	Athletic Club	1,000 SF	5.96
495	Recreational Community Center	1,000 SF	1.45
<b>INSTITUTIONAL</b>			
520	Elementary School	1,000 SF	1.21
522	Middle School / Junior High School	1,000 SF	1.19
530	High School	1,000 SF	0.97
536	Private School (K-12)	Students	0.17
540	Junior / Community College	1,000 SF	2.54
560	Church	1,000 SF	0.55
565	Daycare Center	1,000 SF	12.46
566	Cemetery	Acres	0.84
571	Prison	1,000 SF	2.91
580	Museum	1,000 SF	0.18
590	Library	1,000 SF	7.30
591	Lodge / Fraternal Organization	Members	0.03
<b>MEDICAL</b>			
610	Hospital	1,000 SF	0.93
620	Nursing Home	1,000 SF	0.74
630	Clinic	1,000 SF	5.18
640	Animal Hospital / Veterinary Clinic	1,000 SF	4.72

Code	Description	Unit of Measure	Trips Per Unit
<b>OFFICE</b>			
710	General Office Building	1,000 SF	1.49
714	Corporate Headquarters Building	1,000 SF	1.41
715	Single Tenant Office Building	1,000 SF	1.74
720	Medical-Dental Office Building	1,000 SF	3.57
730	Government Office Building	1,000 SF	1.21
732	United States Post Office	1,000 SF	1.22
733	Government Office Complex	1,000 SF	2.85
750	Office Park	1,000 SF	1.48
760	Research and Development Center	1,000 SF	1.07
770	Business Park	1,000 SF	1.29
<b>RETAIL</b>			
812	Building Materials and Lumber Store	1,000 SF	4.49
813	Free-Standing Discount Superstore	1,000 SF	4.35
814	Variety Store	1,000 SF	6.82
815	Free Standing Discount Store	1,000 SF	4.98
816	Hardware / Paint Store	1,000 SF	4.84
817	Nursery (Garden Center)	1,000 SF	6.94
818	Nursery (Wholesale)	1,000 SF	5.17
820	Shopping Center	1,000 SF	3.71
823	Factory Outlet Center	1,000 SF	2.29
826	Specialty Retail Center	1,000 SF	2.71
841	New Car Sales	1,000 SF	2.62
842	Recreational Vehicle Sales	1,000 SF	2.54
843	Automobile Parts Sales	1,000 SF	5.98
848	Tire Store	1,000 SF	4.15
850	Supermarket	1,000 SF	9.48
851	Convenience Market (Open 24 Hours)	1,000 SF	52.41
852	Convenience Market (Open 15-16 Hours)	1,000 SF	34.57
853	Convenience Market with Gasoline Pumps	1,000 SF	50.92
854	Discount Supermarket	1,000 SF	8.34
857	Discount Club	1,000 SF	4.18
860	Wholesale Market	1,000 SF	0.88
861	Sporting Goods Superstore	1,000 SF	1.84
862	Home Improvement Superstore	1,000 SF	2.33
863	Electronics Superstore	1,000 SF	4.50
864	Toy / Children's Superstore	1,000 SF	4.99
866	Pet Supply Superstore	1,000 SF	3.38
867	Office Supply Superstore	1,000 SF	3.40
875	Department Store	1,000 SF	1.87

Code	Description	Unit of Measure	Trips Per Unit
876	Apparel Store	1,000 SF	3.83
879	Arts and Craft Store	1,000 SF	6.21
880	Pharmacy / Drugstore without Drive-Through Window	1,000 SF	8.4
881	Pharmacy / Drugstore with Drive-Through Window	1,000 SF	9.91
890	Furniture Store	1,000 SF	0.45
896	DVD/Video Rental Store	1,000 SF	13.60
<b>SERVICES</b>			
911	Walk-In Bank	1,000 SF	12.13
912	Drive-In Bank	1,000 SF	24.30
918	Hair Salon	1,000 SF	1.93
925	Drinking Place	1,000 SF	11.34
931	Quality Restaurant	1,000 SF	7.49
932	High-Turnover (Sit-Down) Restaurant	1,000 SF	11.15
933	Fast Food Restaurant without Drive-Through Window	1,000 SF	26.15
934	Fast Food Restaurant with Drive-Through Window	1,000 SF	33.84
935	Fast Food Restaurant with Drive-Through Window and No Indoor Seating	1,000 SF	153.85
936	Coffee / Donut Shop without Drive-Through Window	1,000 SF	40.75
937	Coffee / Donut Shop with Drive-Through Window	1,000 SF	42.8
938	Coffee / Donut Shop with Drive-Through Window and No Indoor Seating	1,000 SF	75
940	Bread / Donut / Bagel Shop with Drive-Through Window	1,000 SF	18.99
941	Quick Lubrication Vehicle Shop	Service Bays	5.19
942	Automobile Care Center	1,000 SF	3.11
943	Automobile Parts and Service Center	1,000 SF	4.46
944	Gasoline / Service Station	Fueling Positions	13.87
945	Gasoline / Service Station with Convenience Market	Fueling Positions	13.51
946	Gasoline / Service Station with Convenience Market and Car Wash	Fueling Positions	13.94
947	Self Service Car Wash	Stalls	5.54
948	Automated Car Wash	1,000 SF	14.12
950	Truck Stop	1,000 SF	13.63

**Note: All land uses in the 800 and 900 series are entitled to a "passby" trip reduction of 60% if less than 50,000 ft<sup>2</sup> or a reduction of 40% if equal to or greater than 50,000 ft<sup>2</sup>.**

\* Approximated by 10% of Weekday average rate.

# MEMO

**TO:** Brendan O'Reilly, Josi Kytle  
**FROM:** Jonathan Slason, PE  
**DATE:** November 28, 2016  
**SUBJECT:** Richmond Creamery Traffic Impact Review

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On behalf of Buttermilk LLC., RSG has conducted an analysis of traffic operations proximate to the proposed redevelopment of the former Richmond Creamery property off Jolina Court in Richmond, Vermont. This memorandum has been prepared to document the effects that the project may have on the local traffic conditions in downtown Richmond in connection with a local permit land use development application.

## 1.0 SUMMARY OF KEY FINDINGS

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We offer the following summary of key findings based on the analysis presented in this memorandum:

- The project is located east of Bridge Street and south of US 2 in Richmond, Vermont. The project site will consist of multiple phases of redevelopment consisting generally of residential apartments (rental units) and a mix of non-residential uses including restaurant, retail, and general office space.
- Access to the site will be via Jolina Court off Bridge Street directly across from the Richmond Market on Railroad Street.
- The first phase of the site redevelopment is expected to generate 9 AM peak hour trips and 13 PM peak hour trips.
- The full build of the site (phases 1, 2, & 3) is more speculative but, given the estimated land uses, is expected to generate 53 AM peak hour trips and 57 PM peak hour trips.
- Minor delays and LOS B for vehicles exiting the site via Jolina Court and LOS C for vehicles exiting Railroad Street across from the site access, and negligible delays and LOS A for traffic along Bridge Street are anticipated with the addition of site related traffic.
- The site is expected to generate fewer than the VTrans study area standard 75 peak hour vehicle trips. The Town of Richmond asked to review the impacts of the site related traffic at the nearby US 2 / Bridge Street intersection. It is expected that the LOS will remain unchanged with the addition of the site traffic which operates at LOS D, higher than the targeted operational threshold set by the VTrans LOS policy.. There is expected to be a slight increase in overall delay at the signalized intersection in the PM peak hour.
- There are two high crash locations in the study area. There were no direct patterns or crash type which would be exacerbated by the additional traffic due to the project. The primary crash type of rear ends will likely remain to be the predominate type, related to the long

queues related to the signalized intersection and the number of points of conflict and activity in the study area associated with driveways, on-street parking, railway crossings, and the overall level of traffic.

- The proposed site access should upgrade the Jolina Court intersection with Bridge Street to include curbing, sidewalks, and crosswalks in keeping with the Bicycle and Pedestrian study completed in 2010.
- Dedicated turning lanes into Railroad Street or Jolina Court are not warranted.
- Based on the analysis presented above we project that redevelopment of the Richmond Creamery, as proposed, will not cause unreasonable congestion or unsafe conditions on the local roadway network and will not adversely impact the public investment in roadway infrastructure in the adjacent area.





- 13 apartments and 29,250 s.f. of commercial space.
- For the purpose of this study we will assume a mix of commercial space use, as follows:
  - High turnover Sit-down Restaurant: 1,500 s.f.
  - Quality Restaurant: 1,500 s.f.
  - Specialty Retail: 4,500 s.f.
  - General Office Space: 21,750 s.f.

For reference and comparison, local examples of the types of restaurants are well represented by Chef’s Table (“quality”) and Hachet (“high turnover”). The main difference is whether they serve breakfast or not, and the turnover is a little slower / less frequent for the quality restaurant in the evening.

This study relies upon design standards and analysis procedures documented in the 2010 Highway Capacity Manual,<sup>1</sup> Trip Generation,<sup>2</sup> A Policy on Geometric Design of Highways and Streets,<sup>3</sup> Manual on Uniform Traffic Control Devices (MUTCD),<sup>4</sup> Traffic Impact Evaluation: Study and Review Guide,<sup>5</sup> and the Vermont State Design Standards,<sup>6</sup> which are the generally accepted traffic analysis references relied upon by traffic engineering professionals and VTrans for projects of this type in Vermont.

VTrans guidelines specify that a traffic study should be considered if the proposed development will generate 75 or more peak hour trips. The geographic scope of the study should also include the immediate access points and those intersections or highway segments receiving 75 or more project-generated peak hour trips.<sup>7</sup>

Although we do not anticipate that the project will generate more than 75 vehicle trips during the peak hour the Town has asked that the two intersections: Jolina Court / Bridge Street and the US 2 / Bridge Street are analyzed in this study.

### 3.0 LOCAL TRAFFIC

The section of Bridge Street proximate to the proposed site is a two-lane roadway (one lane in each direction) with a posted speed limit of 25 miles per hour. In 2015, VTrans recorded an annual average daily traffic volume (AADT) of 8,000 vehicles per day along US 2 at station S6D112, approximately 0.8 miles west of the US 2 / Bridge Street intersection. A second count site (RICH29)

<sup>1</sup> Transportation Research Board, National Research Council, *Highway Capacity Manual* (Washington, DC: National Academy of Sciences, 2010).

<sup>2</sup> Institute of Transportation Engineers, *Trip Generation* 9<sup>th</sup> Edition (Washington, D.C.: Institute of Transportation Engineers, 2012).

<sup>3</sup> American Association of State Highway and Transportation Officials (AASHTO), *A Policy on Geometric Design of Highways and Streets*, 6<sup>th</sup> Edition (Washington DC: AASHTO, 2011).

<sup>4</sup> American Traffic Safety Services Association (ATSSA), ITE, and AASHTO, *Manual on Uniform Traffic Control Devices*, 2009 Edition (Washington DC: FHWA, 2009).

<sup>5</sup> Vermont Agency of Transportation, Development Review Section, *Traffic Impact Evaluation Study and Review Guide* (October 2008).

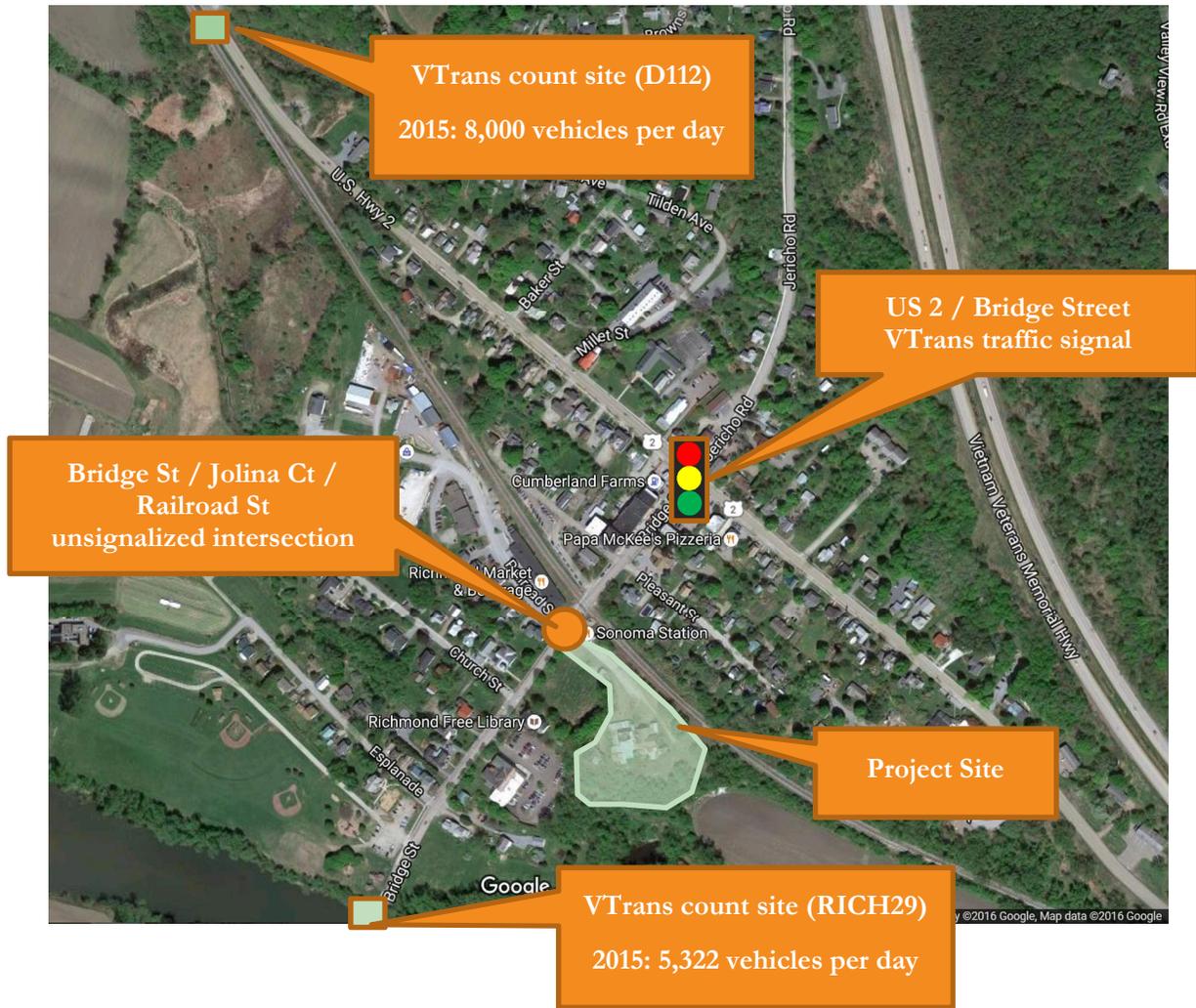
<sup>6</sup> State of Vermont Agency of Transportation, *Vermont State Standards* (Montpelier: VTrans, 1 July 1997).

<sup>7</sup> Vermont Agency of Transportation, Development Review Section, *Traffic Impact Evaluation Study and Review Guide* (January 2003).

on Richmond Road was used to develop the adjustments at the Jolina Court site entrance. This site is located just south of the Winooski River bridge and had an AADT of 5,322 in 2015.

Count data collected by VTrans in 2015 indicate the highest traffic volumes along US 2 occur during the weekday AM and PM peak hours. Traffic impacts during the two time periods are examined in this study.

**FIGURE 2: PROJECT LOCATION AND STUDY AREA INTERSECTIONS**



## 4.0 ANALYSIS TRAFFIC VOLUMES

This analysis examines design hour vehicle delays and queues at the following two intersections:

1. US 2 / Bridge Street
2. Bridge Street / Jolina Court / Railroad Street

Vehicle delays and queues are examined first with baseline, **No Build** scenario, traffic volumes, which represent the anticipated design hour conditions in the target study years without the proposed development in place.

Once baseline conditions are established, anticipated traffic associated with the proposed development is added to the No Build scenario volumes to create **Build** scenario traffic volumes, which are in turn used to project intersection delays and levels of service with the proposed development in place.

A detailed description of the elements that contribute to the No Build and Build scenario traffic volumes is presented below.

## **4.2 | BACKGROUND TRAFFIC VOLUMES AND ADJUSTMENTS**

RSG obtained the most recent VTrans turning movement count data at the US 2 / Bridge Street intersection (counted on June 25<sup>th</sup> and 26<sup>th</sup> 2015 by VTrans). Additional count data was collected by RSG for the Bridge Street / Jolina Court / Railroad Street intersection on November 10, 2016.

Following VTrans traffic study guidelines, raw peak hour traffic volumes were adjusted to represent the design hour volume (DHV)<sup>8</sup> in 2017 and 2022<sup>9</sup> using two adjustment factors:

1. Design hour adjustment factor for the US 2 / Bridge Street intersection is based on VTrans count station S6D112, which is located along US 2 in Richmond 0.80 miles west of the Bridge Street intersection. The 2015 DHV at this station was compared to the peak hour volumes on the date of the turning movement count to formulate DHV adjustments. DHV adjustments increased raw count volumes by 9%. The Jolina Court design hour adjustment factor is based on the VTrans count station Richmond29, just south of the Winooski River bridge. The 2015 DHV factor was taken from the VTrans Rural Primary and Secondary adjustment classification. The DHV adjustment increased raw count volumes by 1%.
2. An annual adjustment factor, which represents general background traffic growth, is based on historic count data at VTrans count station S6D112. Traffic volumes on US 2 have historically been higher or at least as high as they currently are. The 20-year projection included in the VTrans Red Book indicate a flat, zero growth rate.

## **4.3 | OTHER DEVELOPMENT VOLUMES**

Other development volumes (ODVs) represent trips generated by anticipated developments in the study area. Trips generated by ODVs are included in every scenario (both No Build and Build) because we assume they are already present on the road network in the analysis years.

Through discussion with the Town of Richmond there were no ODVs included in this assessment.

## **4.4 | TRIP GENERATION**

Trip generation refers to the number of new vehicle trips originating at or destined for a particular development. Traffic generated by redeveloped the Creamery site will primarily consist of new residents and store patrons who may stop at the store while driving by or who may make entirely

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<sup>8</sup> The DHV is the 30th highest hour of traffic for the year and is used as the design standard in Vermont.

<sup>9</sup> VTrans requires analysis during the year project construction is expected to be complete and in a future year scenario 5 years after project completion. Due to Zero growth rate, the 2022 Build is the same as 2017 and therefore excluded from a separate analysis.

new vehicle trips to the store. New vehicle trips include all users to the site including employees, deliveries and other incidental users.

To estimate the number of new vehicle trips for the project, we examined trip generation rates presented in the Institute of Transportation Engineer’s *Trip Generation Manual*.<sup>10</sup> Applying trip generation rates for the ITE land use codes shown below in the table for phase 1 and the full build.

The mix of land uses is an excellent array of both generators and attractors of trips and therefore lends itself to capture a portion of trips internally to the project site. The most recent ITE guidance to estimate the amount of internal trip making within the site comes from the NCHRP 684 research document. For example, a resident may work at an office at the site. Or a resident may be one of the restaurant patrons. The mix of residential, office, and retail/restaurant allow a portion of each use on its own to attract trips originating from other land uses on site. Overall, this internal capture of trips results in a reduction in trips exiting and entering the project site.

Site generated traffic can be differentiated between primary and pass-by trips. While primary trips represent people who leave their home, place of work, or other origin expressly to visit the site and who would not otherwise have gotten into their vehicle to make a trip, pass-by trips represent vehicles that currently pass by the site on the local road network and who, when the proposed development is present, turn into the site on their way to another destination. Pass-by trips are converted from through movements to turning movements to and from the site at the development access points but do not add new trips to intersections beyond the site access. We expect that the retail and the restaurant land uses will have a pass-by percentage of trips, 34% and 43% respectively.

Figure 3 presents the projected phase 1 trip generation, broken out into primary and pass-by traffic.

**FIGURE 3: TRIP GENERATION SUMMARY – PHASE 1**

Land Use	Size	Projected Trip Generation			
		AM		PM	
		Enter	Exit	Enter	Exit
Residential Condominium/Townhouse	8 units	1	3	3	1
General Office Building	2,800 sq ft	4	1	1	3
Specialty Retail Center	3,610 sq ft	0	0	4	5
<b>Total</b>		<b>5</b>	<b>4</b>	<b>8</b>	<b>9</b>
Internal Capture		0	0	1	1
External Trips		5	4	7	8
Retail Pass-By	34%	0	0	1	1
<b>Total Primary</b>		<b>5</b>	<b>4</b>	<b>6</b>	<b>7</b>

Phase 1 of the development is expected to generate 9 primary (new) trips during the AM peak hour and 13 primary (new) trips during the PM peak hour after accounting for internal capture and pass-by trips.

<sup>10</sup> Institute of Transportation Engineers, *Trip Generation* 9th Edition (Washington, D.C.: Institute of Transportation Engineers, 2012).

**FIGURE 4 - DISTRIBUTION OF SITE-GENERATED TRIPS – PHASE 1 BUILD**

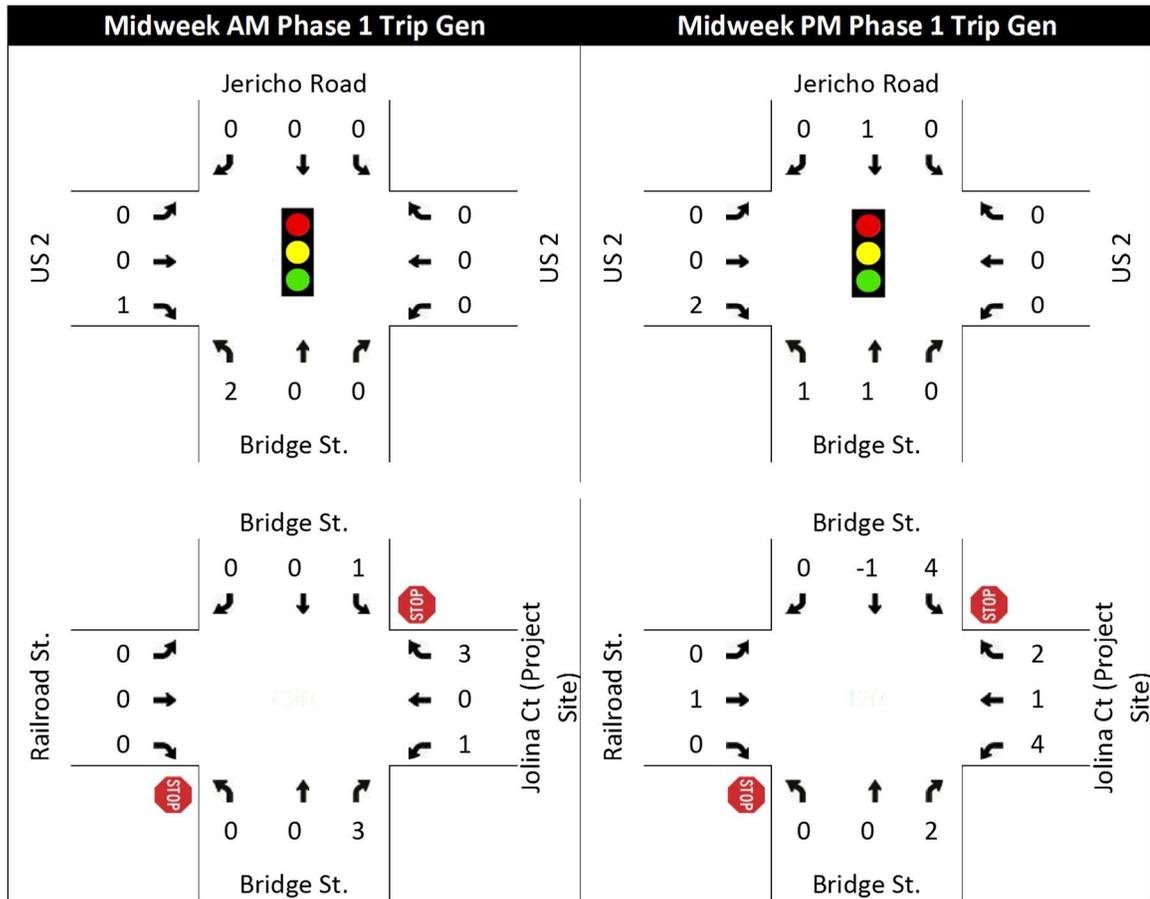


Figure 5 presents the projected full build trip generation, broken out into primary and pass-by traffic.

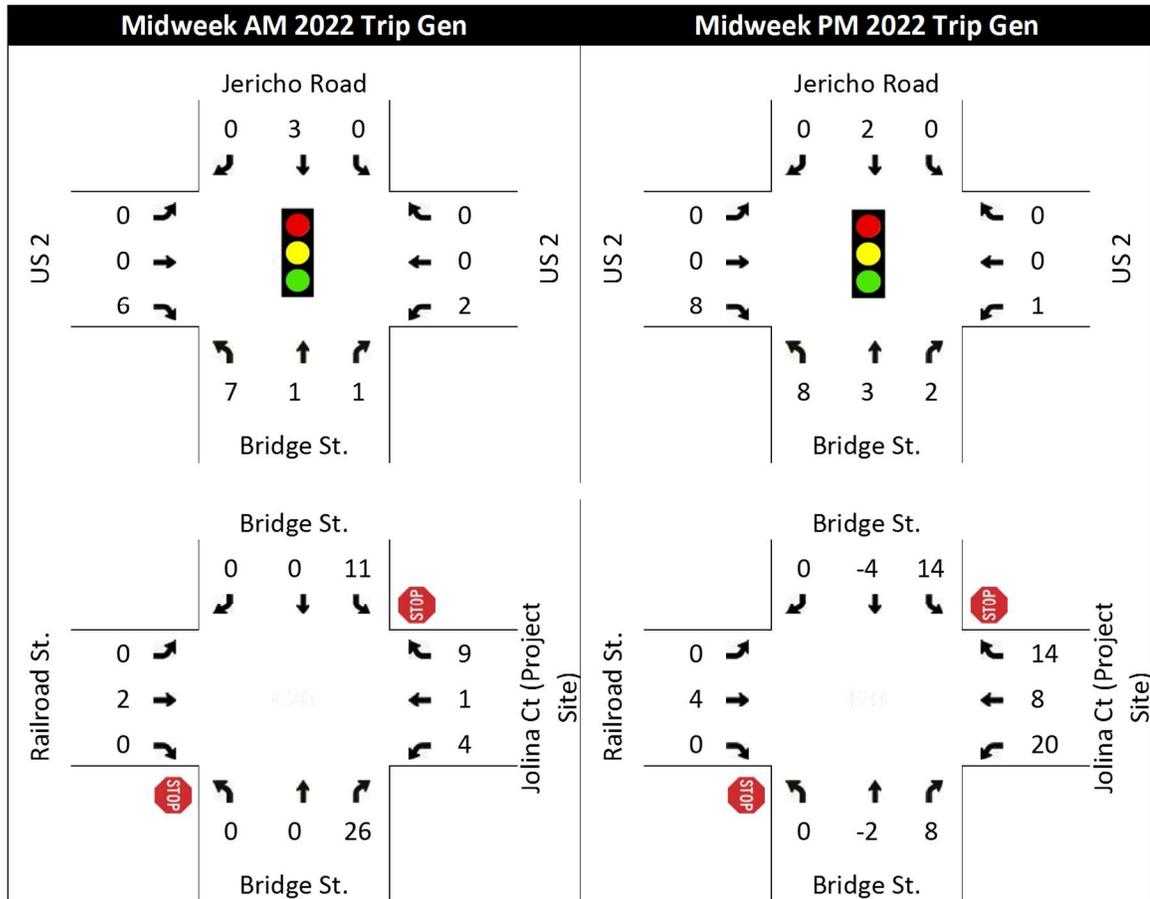
**FIGURE 5: TRIP GENERATION SUMMARY – FULL BUILD**

Land Use	Size	Projected Trip Generation			
		AM		PM	
		Enter	Exit	Enter	Exit
Residential Condominium/Townhouse	8 units	1	3	3	1
Apartment	13 units	1	5	5	3
Quality Restaurant	1,500 sq ft	0	0	7	4
High-Turnover (Sit-Down) Restaurant	1,500 sq ft	9	7	9	6
General Office Building	24,550 sq ft	34	5	6	30
Specialty Retail Center	8,110 sq ft	0	0	6	8
<b>Total</b>		<b>45</b>	<b>20</b>	<b>36</b>	<b>52</b>
Internal Capture		6	6	10	10
External Trips		39	14	26	42
Retail Pass-By	34%	0	0	1	1
Restaurant Pass-By	43%	0	0	6	3
<b>Total Pass-By</b>		<b>0</b>	<b>0</b>	<b>7</b>	<b>4</b>
<b>Total Primary</b>		<b>39</b>	<b>14</b>	<b>19</b>	<b>38</b>

Full build at the site (phases 1, 2, and 3) of the development is expected to generate 53 primary (new) trips during the AM peak hour and 57 primary (new) trips during the PM peak hour after accounting for internal capture and pass-by trips.

Figure 6 presents a map of the estimated distribution of project-generated trips in the full build scenario.

**FIGURE 6: DISTRIBUTION OF SITE-GENERATED TRIPS – FULL BUILD**



#### 4.5 | SCENARIO VOLUME GRAPHICS

Figure 7 through Figure 10 present the No Build and Build scenario traffic volumes at the two study area intersections. No Build traffic volumes include the raw count volumes and adjusted to design hour conditions. Build scenario volumes include the addition of project-generated traffic (both primary and pass-by trips) to the No Build traffic volumes.

With the addition of site-generated traffic, volumes entering and exiting the project site increase in the Build scenario and these trips are carried out through the neighboring intersections. Sometimes due to rounding the intersection volumes shown above may be off by one vehicle.

FIGURE 7: 2017 PEAK HOUR NO BUILD

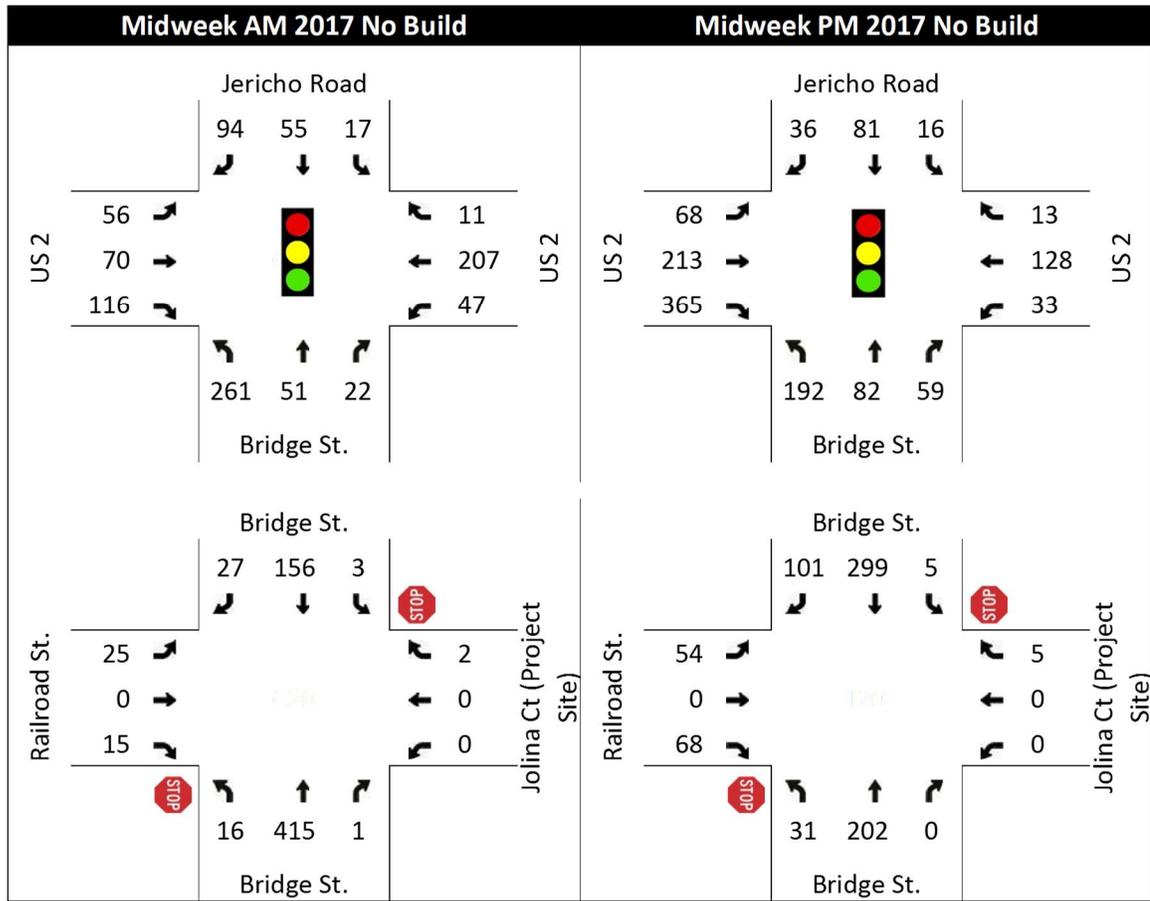


FIGURE 8: 2017 PEAK HOUR BUILD (PHASE 1)

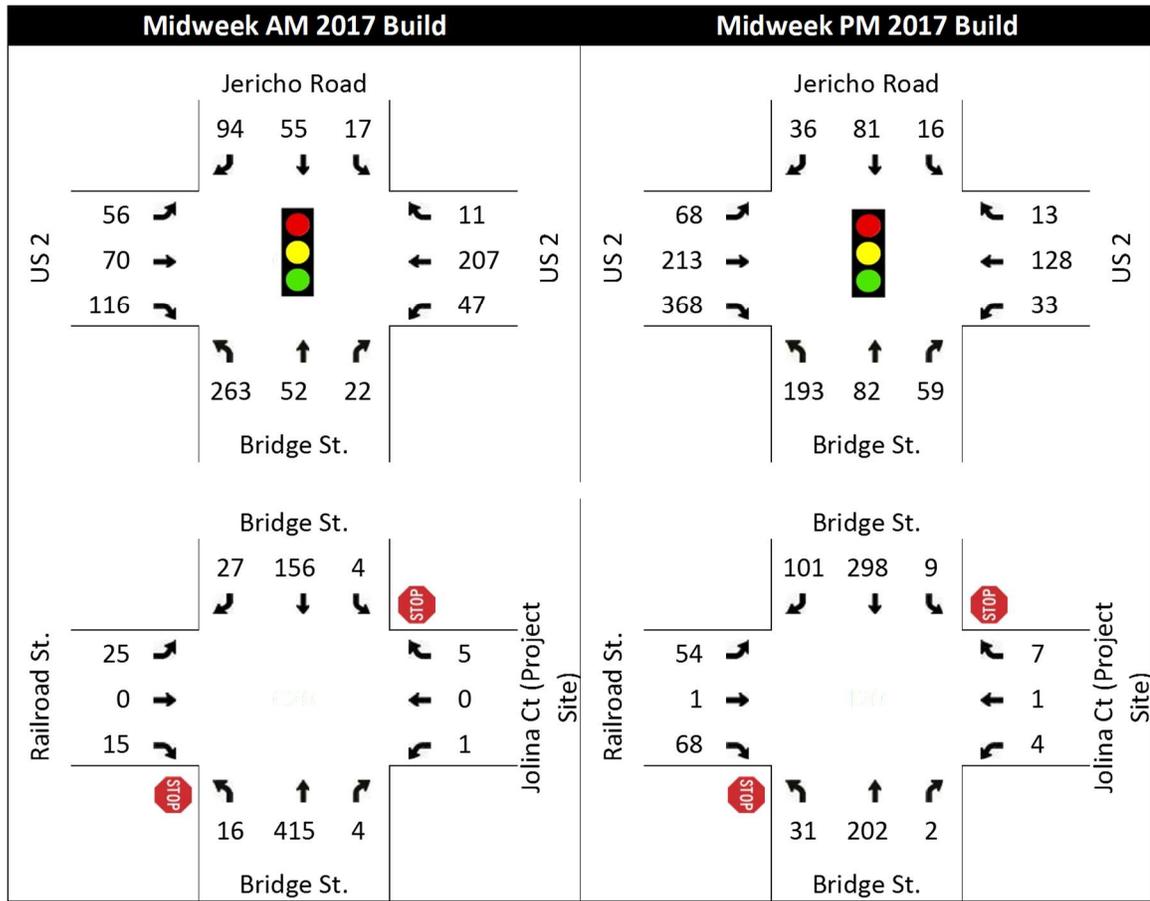


FIGURE 9: 2022 PEAK HOUR NO BUILD (INCLUDES PHASE 1 TRAFFIC)

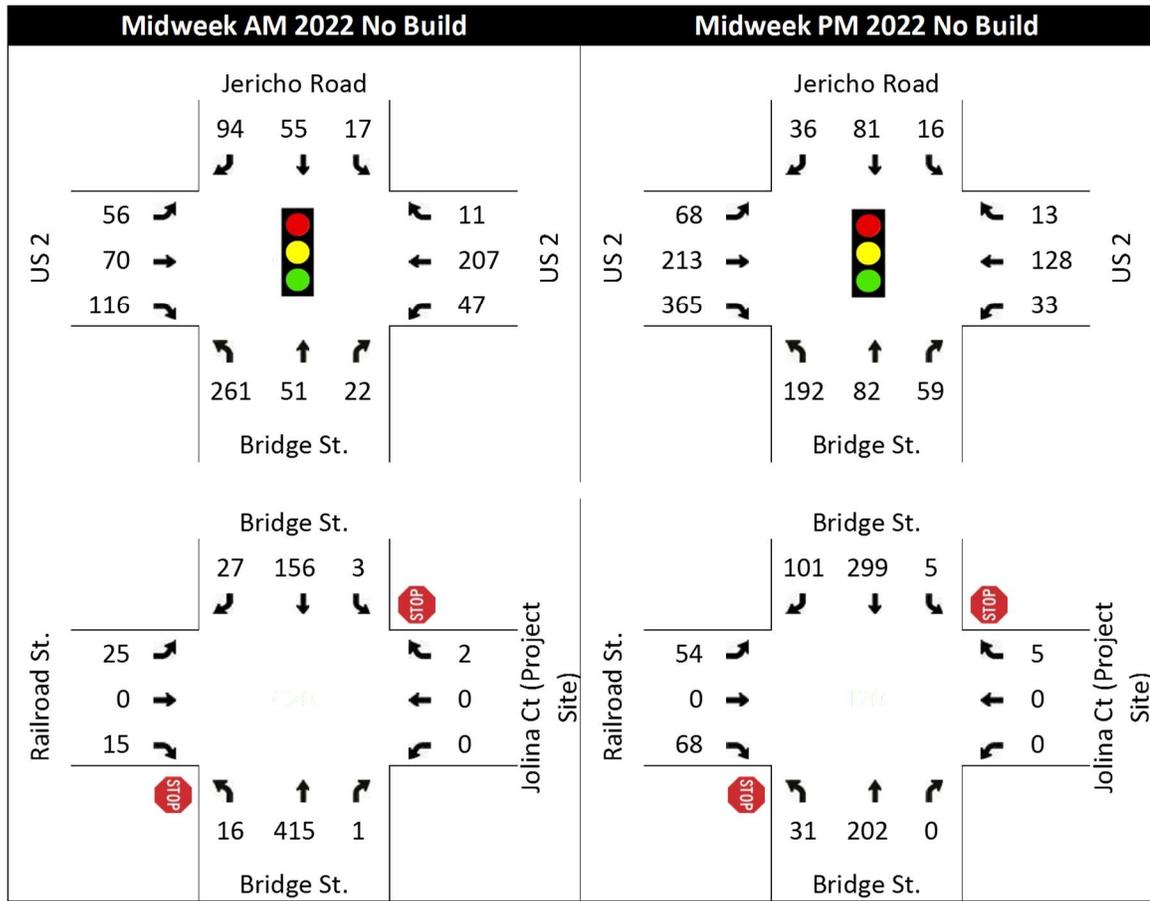
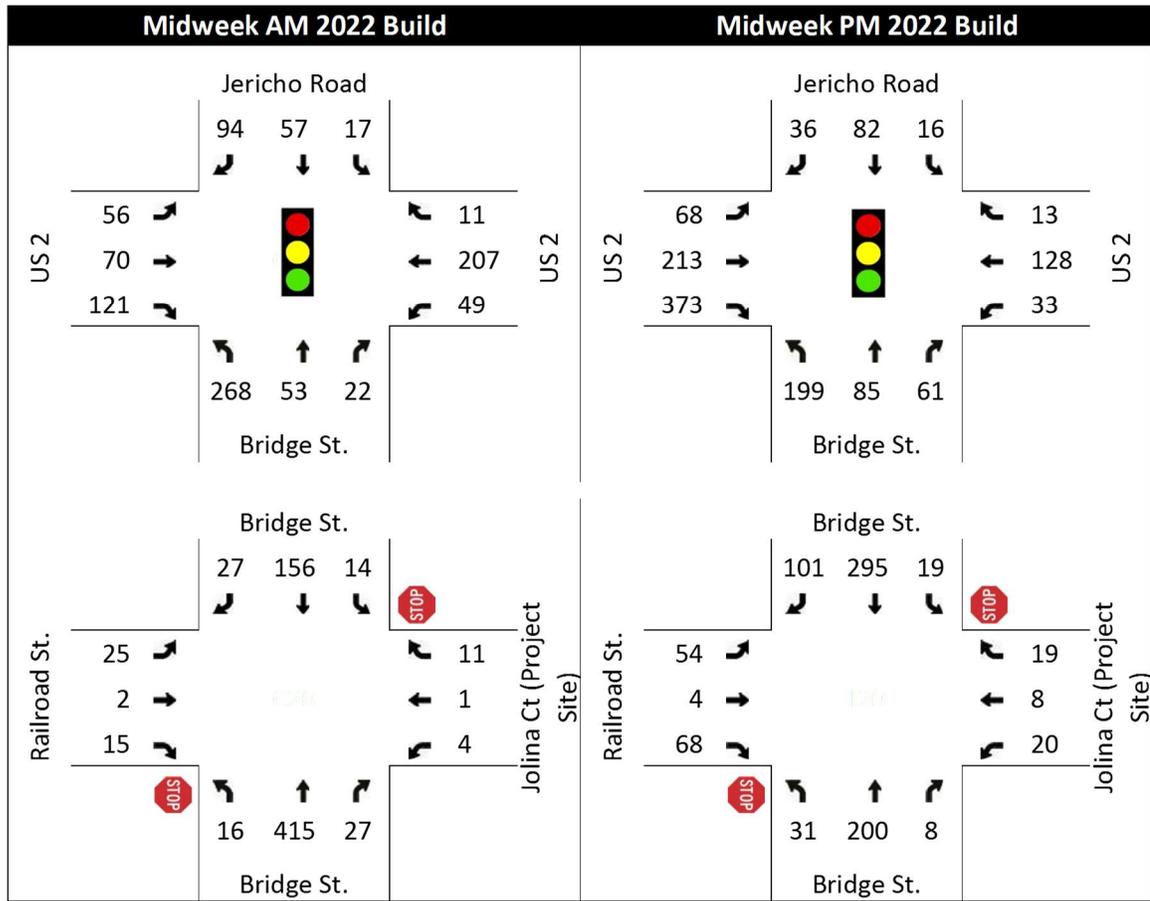


FIGURE 10: 2022 PEAK HOUR BUILD (PHASES 1, 2 AND 3)



The project analysis volumes and adjustments are included in Appendix A.

## 5.0 CONGESTION ANALYSIS

### 5.1 | LEVEL-OF-SERVICE DEFINITION

Level-of-service (LOS) is a qualitative measure describing the operating conditions as perceived by motorists driving in a traffic stream. LOS is calculated using the procedures outlined in the 2000 and 2010 Highway Capacity Manuals.<sup>11</sup> In addition to traffic volumes, key inputs include the number of lanes at each intersection, traffic control type (signalized or unsignalized), and the traffic signal timing plans.

The 2010 Highway Capacity Manual defines six qualitative grades to describe the level of service at an intersection. Level-of-Service is based on the average control delay per vehicle. Figure 11 shows the various LOS grades and descriptions for signalized and unsignalized intersections.

**FIGURE 11: LEVEL-OF-SERVICE CRITERIA FOR SIGNALIZED AND UNSIGNALIZED INTERSECTIONS**

LOS	CHARACTERISTICS	UNSIGNALIZED	SIGNALIZED
		TOTAL DELAY (SEC)	TOTAL DELAY (SEC)
A	Little or no delay	≤ 10.0	≤ 10.0
B	Short delays	10.1-15.0	10.1-20.0
C	Average delays	15.1-25.0	20.1-35.0
D	Long delays	25.1-35.0	35.1-55.0
E	Very long delays	35.1-50.0	55.1-80.0
F	Extreme delays	> 50.0	> 80.0

The delay thresholds for LOS at signalized and unsignalized intersections differ because of the driver's expectations of the operating efficiency for the respective traffic control conditions. According to HCM procedures, an overall LOS cannot be calculated for two-way stop-controlled intersections because not all movements experience delay. In signalized and all-way stop-controlled intersections, all movements experience delay and an overall LOS can be calculated.

The VTrans policy on level of service for **Signalized Intersections** is:

- Overall LOS C should be maintained for state-maintained highways and other streets accessing the state's facilities
- Reduced LOS may be acceptable on a case-by-case basis when considering, at minimum, current and future traffic volumes, delays, volume to capacity ratios, crash rates, and negative impacts as a result of improvement necessary to achieve LOS C.

<sup>11</sup> The HCM 2010 does not provide methodologies for calculating intersection delays at certain intersection types including signalized intersections with exclusive pedestrian phases and signalized intersections with non NEMA-standard phasing. Because of these limitations, HCM 2000 methodologies are employed where necessary.

The VTrans policy on level of service for **Two-Way and One-Way Stop Intersections** is:

- LOS D should be maintained for side roads with volumes exceeding 100 vehicles/hour for a single lane approach (150 vehicles/hour for a two-lane approach) at two-way stop-controlled intersections. The LOS D criteria for the single lane approach is in effect for Jolina Court.

## 5.2 | LEVEL-OF-SERVICE RESULTS

The Highway Capacity Manual congestion reports within Synchro (v9), a traffic analysis software package from Trafficware, routinely relied upon by transportation engineering professionals, were used to assess traffic congestion at the study intersections.

The US 2 / Bridge Street intersection shows an increase in delay with the addition of project site traffic, although there is no change in LOS. The PM peak hour conditions exceed the target identified by the VTrans LOS policy noted earlier in the No Build scenario.

The project site drive at Jolina Court at Bridge Street is expected to increase delay and change LOS from A to LOS B with the addition of the project site traffic in the PM peak hour. The unsignalized, side-street stop controlled intersection is expected to operate under acceptable LOS conditions with the addition of project traffic.

Figure 12 and Figure 13 present the LOS results during the weekday AM and PM peak hours at the US 2 / Bridge Street and at the Bridget Street / Jolina Court project entrance, respectively.

**FIGURE 12: US 2 / BRIDGE STREET INTERSECTION LOS**

<b>US 2 / Bridge Street - HCM 2000 Signalized (overall)</b>				
<b>Scenario</b>	<b>AM</b>	<b>Delay</b>	<b>PM</b>	<b>Delay</b>
		<b>(sec/veh)</b>		<b>(sec/veh)</b>
2017-2022 No Build	B	18.1	D	41.0
2017 Build	B	18.2	D	43.4
2022 Build	B	18.5	D	50.6

**FIGURE 13: PROJECT SITE DRIVE - BRIDGE ST / JOLINA CT SIDESTREET LOS**

<b>Project Site Drive - HCM 2010 TWSC (Approach Level of Service)</b>				
<b>Scenario</b>	<b>AM</b>		<b>PM</b>	
	<i>EB Railroad St.</i>	<i>WB Jolina Ct.</i>	<i>EB Railroad St.</i>	<i>WB Jolina Ct.</i>
2017-2022 No Build	B	B	C	A
2017 Build	B	B	C	B
2022 Build	B	B	C	B

Detailed Synchro LOS worksheets are available in Appendix B.

### 5.3 | CRASH HISTORIES

Crash histories were collected from VTrans (January 2011-December 2015). VTrans maintains a statewide database of all reported crashes along all state highways and federal aid road segments.<sup>12</sup> Within this 5 year period, 49 crashes occurred within the study area stopping sight distance of the US 2 / Bridge Street intersection (US 2 mile marker 2.72) and the Jolina Court intersection along Bridge Street (Bridge Street mile marker 5.05). Among these 49 crashes, there were four injuries. 20 of the crashes were rear end crash types. Five of the crashes were single vehicle crashes. Three of the crashes were turning ‘T-bone’ broadside type crashes.

**FIGURE 14: CRASH TYPES BY ROADWAY TYPE**

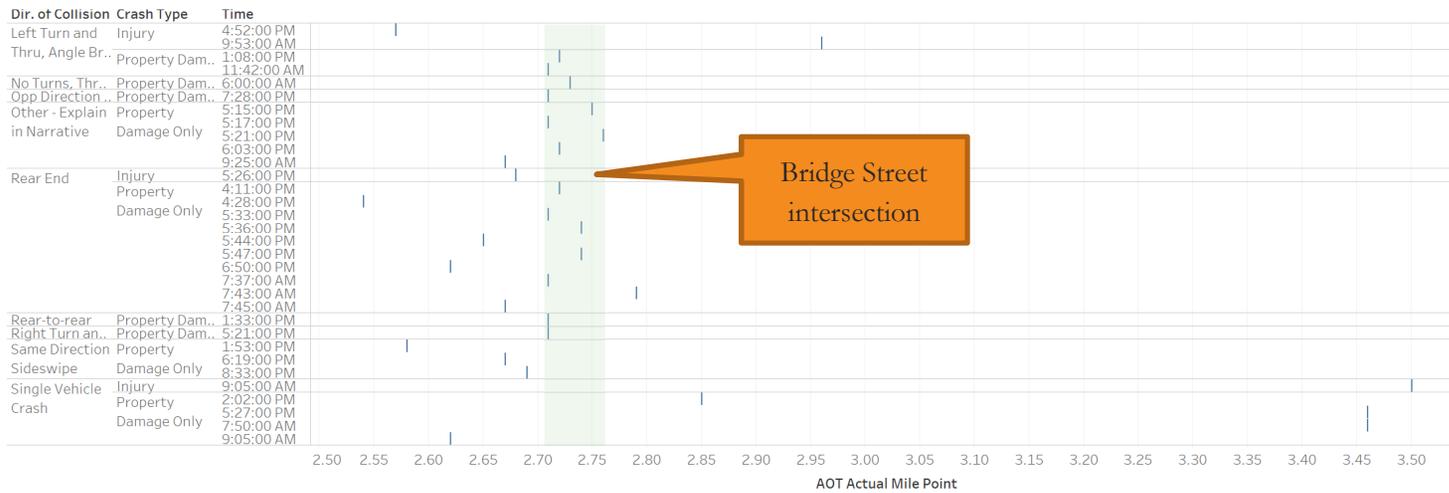
Crash Type	Bridge Street	US 2
Left Turn and Thru, Angle Broadside -->v--		2
Left Turn and Thru, Same Direction Sideswipe/Angle Crash vv--	1	
No Turns, Thru moves only, Broadside ^<	1	1
Opp Direction Sideswipe		1
Other - Explain in Narrative	2	5
Rear End	10	10
Rear-to-rear	4	1
Right Turn and Thru, Angle Broadside -->^--		1
Right Turn and Thru, Same Direction Sideswipe/Angle Crash ^^--	1	
Same Direction Sideswipe	2	2
Single Vehicle Crash	3	2

As indicated in Figure 15, almost all crashes occurred during the afternoon and evening. This is when there is a greater overall level of activity within the study area, stores are open, and the afternoon commute home is the highest level of traffic volume.

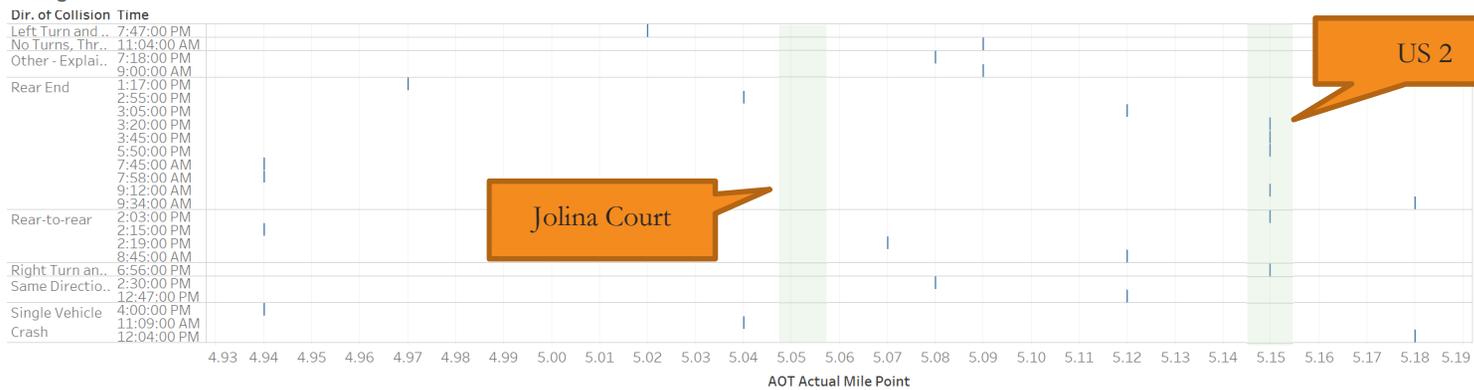
<sup>12</sup> This data is exempt from Discovery or Admission under 23 U.S.C. 409.

**FIGURE 15: US 2 & BRIDGE STREET CRASHES BY TYPE AND TIME OF DAY**

US 2



Bridge Street in the area of Interest



The Vermont Agency of Transportation maintains a list of high crash locations (HCL), which are intersections and roadway segments that have high crash rates over five years compared to other intersections or segments with similar functional classification and traffic levels. The most recent report including the full years of 2010 to 2014 was used.

There are two high crash locations within the study area; a) at the US 2 / Bridge Street intersection, and b) along Bridge Street in the vicinity of the project entrance.

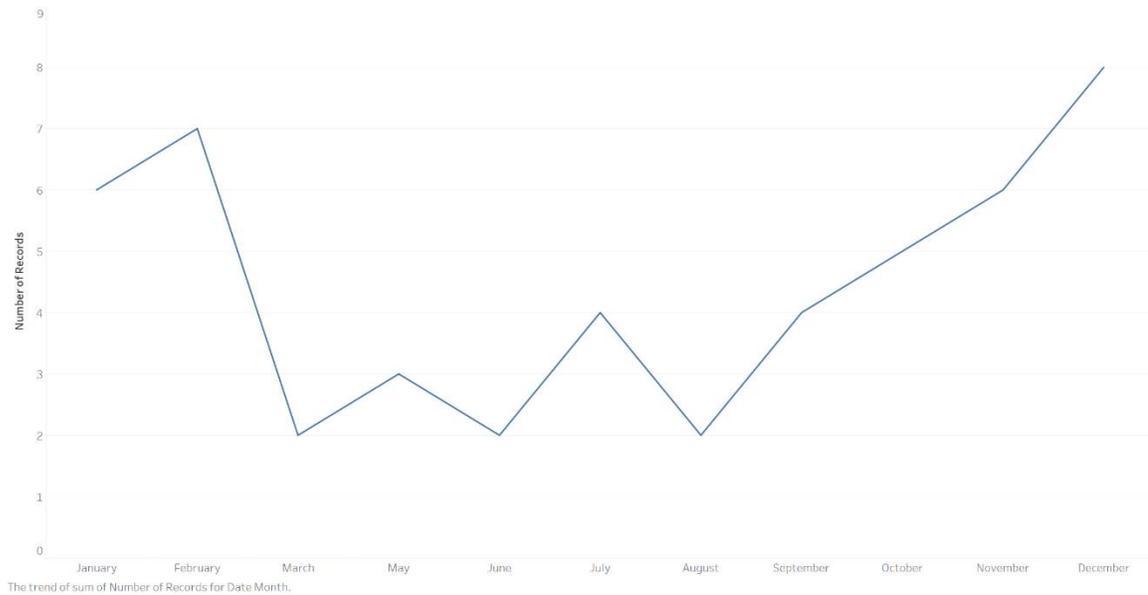
- The US 2 / Bridge Street intersection is ranked as the 10<sup>th</sup> highest actual to critical ratio (2.0) intersection in Vermont. Twenty-six crashes occurred with 1 injury.
- Bridge Street roadway segment from mile marker 4.770 – 5.070 is ranked 575<sup>th</sup> with an actual to critical ratio of 1.055. Eight crashes occurred with two injuries.

The review of the available crash data suggest that the crashes are likely related to the significant queuing and general level of background activity.

The project site entrance at Jolina Court is located within the Bridge Street high crash location and it appears that the majority of crashes occur during the PM period, which is the highest level of activity, but not the time period with longest queues and congestion (the AM peak).

Figure 16 shows a clear pattern of crashes occurring during the winter months within the study area.

**FIGURE 16: CRASHES BY MONTH**



The review of available crash data suggest that safety in the project study area would not be significantly impacted by the addition of project traffic.

## 6.0 TURN-LANE WARRANT ASSESSMENT

In assessing the proposed site access, we conducted a turn lane warrant analysis to determine if projected peak hour traffic volumes are sufficient to meet warrant thresholds for construction of a dedicated left-turn lane into the site. Dedicated left-turn lanes have the safety and capacity benefits of removing left-turning traffic from the through volume traffic stream but also promote higher vehicle speeds and require increased pavement widths.

Using the full build scenario volumes, we conducted a turn lane warrant analysis at the site entrance at Bridge Street / Jolina Court / Railroad Street intersection using both of the VTrans approved methodologies, Harmelink and Kikuchi and Chakroborty (1991).

Neither assessed method met the warrant criteria for either a turn lane into Railroad Street or into Jolina Court.

Figure 17 presents a summary of the northbound left-turn lane analysis.

**FIGURE 17: LEFT-TURN LANE WARRANT ANALYSIS AT JOLINA COURT**

2022 Full Build Volumes (Phases 1,2, and 3)

Northbound (to Railroad St)	AM Peak Hour	PM Peak Hour
Advancing Volume ( $V_A$ )	457	239
Opposing Volume ( $V_O$ )	198	415
% Left Turns	4%	13%
Warranted?	<b>No</b>	<b>No</b>

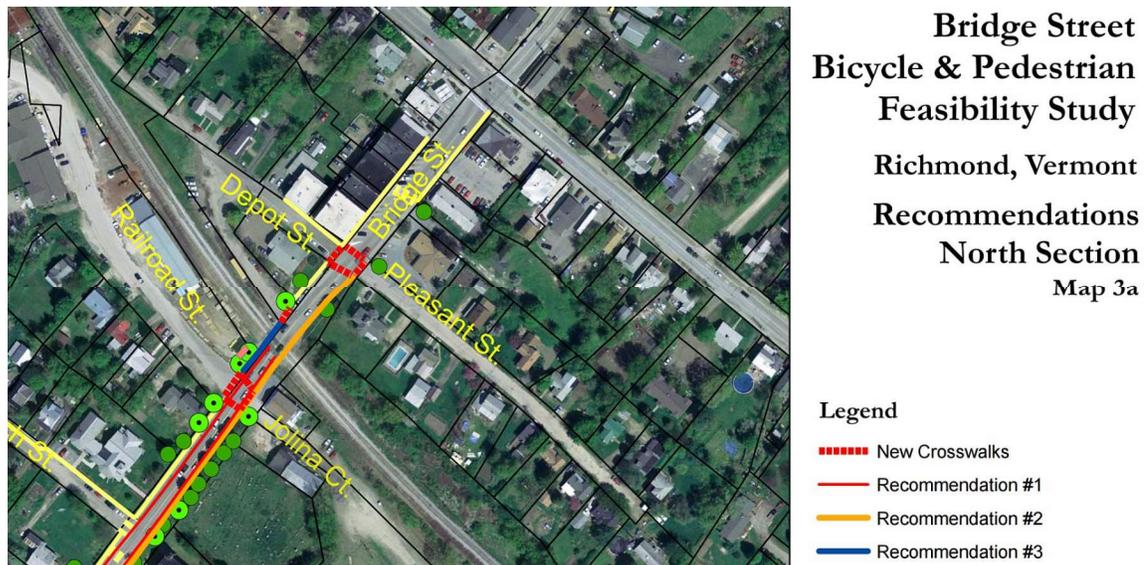
Southbound (to Jolina Ct)	AM Peak Hour	PM Peak Hour
Advancing (WB) Volume ( $V_A$ )	198	415
Opposing (EB) Volume ( $V_O$ )	457	239
% Left Turns	7%	5%
Warranted?	<b>No</b>	<b>No</b>

## 7.0 PEDESTRIAN FACILITIES

In the study area, sidewalks currently exist on the west side of Bridge Street. The 2010 Bridge Street Bicycle and Pedestrian Feasibility Study<sup>13</sup> outlined expectations for building a sidewalk network on the east side of Bridge Street which would connect Jolina Court to sidewalks to the south and north. The study also recommended crosswalks across Bridge Street at Jolina Court. The recommendations are shown in Figure 18.

<sup>13</sup> Bridge Street Bicycle & Pedestrian Feasibility Study, 26 April 2010. Broadreach Planning & Design

**FIGURE 18: BICYCLE AND PEDESTRIAN STUDY RECOMMENDATIONS**



The *Vermont Pedestrian and Bicycle Facility Planning and Design Manual* states that a 2-lane roadway with an AADT between 3,000 and 9,000 vehicles per day is a good candidate for a marked crosswalk.<sup>14</sup>

The improvements to the Bridge Street / Jolina Court intersection should include constructing the sidewalks and pedestrian crossing facilities in the project area. The future mix of uses at the project site supplement the existing mix of services, retail, and commercial in downtown Richmond. Supporting bicycle and pedestrian travel between all these uses will reduce vehicle traffic, support a lively and vibrant town, and reduce the environmental impacts of the project.

## 8.0 CONCLUSIONS

The proposed redevelopment of the Richmond Creamery property in downtown Richmond, Vermont located southeast of the US 2 / Bridge Street intersection will be completed in phases. The first phase is expected to generate 9 AM peak hour trips and 13 PM peak hour trips on the adjacent highway network.

The future, more speculative phases 2 and 3, is comprised of two additional buildings and is expected to generate 53 AM peak hour trips and 57 PM peak hour trips on the adjacent highway network in the full build scenario.

With the addition of project related traffic to the site driveway intersection, we project minor delays and LOS B for vehicles exiting the site via Jolina Court and LOS C for vehicles exiting Railroad Street across from the site access, and negligible delays and LOS A for traffic along Bridge Street.

Although the site is expected to generate less than the 75 peak hour vehicle trips the Town of Richmond asked RSG to review the impacts of the site related traffic at the nearby US 2 / Bridge Street intersection. It is expected that the LOS will remain unchanged with the addition of the site

<sup>14</sup> Vermont Agency of Transportation, *Vermont Pedestrian and Bicycle Facility Planning and Design Manual* (Montpelier: VTrans, 2002) 3-41.

traffic, although there will be a slight increase in overall delay at the signalized intersection in the PM peak hour.

We have reviewed recent VTrans crash data and found that although there are two high crash locations in the study area there were no direct patterns or crash type which would be exacerbated by the additional traffic due to the project. The primary crash type of rear ends will likely remain to be the predominate type, related to the long queues related to the signalized intersection and the number of points of conflict and activity in the study area associated with driveways, on-street parking, railway crossings, and the overall level of traffic.

We have examined the proposed site access plan and when the Jolina Court is upgraded to provide the site access the intersection with Bridge Street should include curbing, sidewalks, and crosswalks in keeping with the Bicycle and Pedestrian study completed in 2010.

We have also conducted a turn-lane warrant analysis to determine if peak hour volumes might justify construction of a dedicated northbound left-turn lane into Railroad Street or a southbound left-turn lane into the project access. The traffic speeds and volumes are not to the magnitude which trigger further investigation and consideration and therefore no dedicated turn lanes are recommended at the Bridge Street / Jolina Court / Railroad Street intersection.

Based on the analysis presented above we project that redevelopment of the Richmond Creamery, as proposed, will not cause unreasonable congestion or unsafe conditions on the local roadway network and will not adversely impact the public investment in roadway infrastructure in the adjacent area.



11/29/16 04:23 PM

**Raw Count Data**

**DHV & Annual Adjustments (3)  
to  
2017**

**Apply Adjustments**

**Adjusted Raw Counts  
2017**

- 1 = Apply Adjustment 1
- 2 = Apply Adjustment 2
- 3 = Apply Adjustment 3

7:30-8:30

JERICHO RD & US-2  
01/00/00  
6/26/2015  
4th Friday  
30411710

	EB	WB	NB	SB	
L	51	43	239	16	
T	64	190	47	50	
R	106	10	20	86	922
Enter	221	243	306	152	922
Exit	100	515	108	199	922
% Trucks					
Peds	0	0	0	0	

Rural

1.09 (From PM Peak)

	EB	WB	NB	SB
L	3	3	3	3
T	3	3	3	3
R	3	3	3	3

	EB	WB	NB	SB	
L	56	47	261	17	
T	70	207	51	55	
R	116	11	22	94	1005
Enter	241	265	334	166	1005
Exit	109	562	118	217	1005

Bridge St/Railroad St/Jolina Ct  
Richmond  
11/10/2016  
2nd Thursday  
2

	EB	WB	NB	SB	
L	25	0	16	3	
T	0	0	411	155	
R	15	2	1	27	655
Enter	40	2	428	185	655
Exit	4	43	438	170	655
% Trucks	5.0%	50.0%	3.0%	7.6%	
Peds	9	0	0	0	

Rural

1.01 (From PM Peak)

	EB	WB	NB	SB
L	3	3	3	3
T	3	3	3	3
R	3	3	3	3

	EB	WB	NB	SB	
L	25	0	16	3	
T	0	0	415	156	
R	15	2	1	27	661
Enter	40	2	432	187	661
Exit	4	43	442	172	661

**ODVs**

**None**

	EB	WB	NB	SB	
L					0
T					0
R					0
Enter	0	0	0	0	0
Exit	0	0	0	0	0

	EB	WB	NB	SB	
L					0
T					0
R					0
Enter	0	0	0	0	0
Exit	0	0	0	0	0

**No Build**

**2017**

	EB	WB	NB	SB	
L	56	47	261	17	
T	70	207	51	55	
R	116	11	22	94	1005
Enter	241	265	334	166	1005
Exit	109	562	118	217	1005

	EB	WB	NB	SB	
L	25	0	16	3	
T	0	0	415	156	
R	15	2	1	27	661
Enter	40	2	432	187	661
Exit	4	43	442	172	661

**Trip Generation  
(Primary)**

	Enter	Exit	
PM	5	4	9
			Phase 1

	EB	WB	NB	SB	
L	0	2			
T			0	0	
R	1		0		4
Enter	1	0	3	0	4
Exit	0	2	0	1	4

	EB	WB	NB	SB	
L	1			1	
T	0				
R	3	3			9
Enter	0	4	3	1	9
Exit	5	0	3	1	9

**Trip Generation  
(Pass by)**

	Enter	Exit	
PM	0	0	0
			Phase 1

	EB	WB	NB	SB	
L					0
T					0
R					0
Enter	0	0	0	0	0
Exit	0	0	0	0	0

	EB	WB	NB	SB	
L					0
T					0
R					0
Enter	0	0	0	0	0
Exit	0	0	0	0	0

**Build  
2017**

	EB	WB	NB	SB	
L	56	47	263	17	
T	70	207	52	55	
R	116	11	22	94	1009
Enter	242	265	336	166	1009
Exit	109	564	118	218	1009

	EB	WB	NB	SB	
L	25	1	16	4	
T	0	0	415	156	
R	15	5	4	27	670
Enter	41	6	435	188	670
Exit	9	44	445	173	670

**Annual  
Adjustment  
2022**

1	n/a
2	n/a
3	1.00

1	n/a
2	n/a
3	1.00

**Adjusted Raw Counts  
2022**

	EB	WB	NB	SB	
L	56	47	261	17	
T	70	207	51	55	
R	116	11	22	94	1005
Enter	241	265	334	166	1005
Exit	109	562	118	217	1005

	EB	WB	NB	SB	
L	25	0	16	3	
T	0	0	415	156	
R	15	2	1	27	661
Enter	40	2	432	187	661
Exit	4	43	442	172	661

**No Build  
2022**

	EB	WB	NB	SB	
L	56	47	261	17	
T	70	207	51	55	
R	116	11	22	94	1005
Enter	241	265	334	166	1005
Exit	109	562	118	217	1005

	EB	WB	NB	SB	
L	25	0	16	3	
T	0	0	415	156	
R	15	2	1	27	661
Enter	40	2	432	187	661
Exit	4	43	442	172	661

**Trip Generation  
(Primary)**

Enter    Exit  
PM    39    14    53  
Phases 1+2

	EB	WB	NB	SB	
L	2	7			
T			1	3	
R	6		1		20
Enter	6	2	9	3	20
Exit	1	7	1	11	20

	EB	WB	NB	SB	
L	4			11	
T	2	1			
R		9	26		53
Enter	2	14	26	11	53
Exit	39	1	9	4	53

**Trip Generation  
(Pass by)**

Enter    Exit  
PM    0    0    0  
Phases 1+2

	EB	WB	NB	SB	
L					
T					
R					0
Enter	0	0	0	0	0
Exit	0	0	0	0	0

	EB	WB	NB	SB	
L					
T					
R					0
Enter	0	0	0	0	0
Exit	0	0	0	0	0

**Build  
2022**

	EB	WB	NB	SB	
L	56	49	268	17	
T	70	207	53	57	
R	121	11	22	94	1026
Enter	247	267	343	169	1026
Exit	110	569	119	228	1026

	EB	WB	NB	SB	
L	25	4	16	14	
T	2	1	415	156	
R	15	11	27	27	714
Enter	43	16	457	198	714
Exit	43	44	451	175	714

11/29/16 04:23 PM

**Raw Count Data** **DHV & Annual Adjustments (3)**  
to **2017**

**16:15-17:15** DHV at S6D112 on US-2 in Richmond **1001**

JERICO RD & US-2  
01/00/00  
6/25/2015  
4th Thursday  
30411710

	EB	WB	NB	SB	
L	62	30	176	15	
T	195	117	75	74	
R	335	12	54	33	1178
Enter	592	159	305	122	1178
Exit	264	326	149	439	1178
% Trucks					
Peds	0	0	0	0	

Rural Primary and Secondary  
TM Count **918**  
DHV Adjustment 1.09  
2015-2017 Growth 1.00  
Total Adjustment **1.09**

Bridge St/Railroad St/Jolina Ct  
Richmond  
11/10/2016  
2nd Thursday  
2

	EB	WB	NB	SB	
L	54	0	31	5	
T	0	0	200	296	
R	67	5	0	100	758
Enter	121	5	231	401	758
Exit	5	131	259	363	758
% Trucks	0.8%	0.0%	6.9%	2.2%	
Peds	16	0	0	2	

Rural Primary and Secondary  
29 AADT \* k-factor of 0.1126 **599**  
DHV Adjustment 1.01  
- Growth 1.00  
Total Adjustment **1.01**

**Apply Adjustments**

- 1 = Apply Adjustment 1
- 2 = Apply Adjustment 2
- 3 = Apply Adjustment 3

	EB	WB	NB	SB
L	3	3	3	3
T	3	3	3	3
R	3	3	3	3

	EB	WB	NB	SB
L	3	3	3	3
T	3	3	3	3
R	3	3	3	3

**Adjusted Raw Counts**  
**2017**

	EB	WB	NB	SB	
L	68	33	192	16	
T	213	128	82	81	
R	365	13	59	36	1285
Enter	646	173	333	133	1285
Exit	288	355	162	479	1285

	EB	WB	NB	SB	
L	54	0	31	5	
T	0	0	202	299	
R	68	5	0	101	765
Enter	122	5	233	405	765
Exit	5	132	261	366	765

**ODVs**  
**Name of Development**

	EB	WB	NB	SB	
L					
T					
R					0
Enter	0	0	0	0	0
Exit	0	0	0	0	0

	EB	WB	NB	SB	
L					
T					
R					0
Enter	0	0	0	0	0
Exit	0	0	0	0	0

**No Build  
2017**

	EB	WB	NB	SB	
L	68	33	192	16	
T	213	128	82	81	
R	365	13	59	36	1285
Enter	646	173	333	133	1285
Exit	288	355	162	479	1285

	EB	WB	NB	SB	
L	54	0	31	5	
T	0	0	202	299	
R	68	5	0	101	765
Enter	122	5	233	405	765
Exit	5	132	261	366	765

**Trip Generation  
(Primary)**

Enter Exit  
PM   13  
Phase 1

	EB	WB	NB	SB	
L	0	1			
T			1	1	
R	2		0		6
Enter	2	0	2	1	6
Exit	0	1	1	3	6

	EB	WB	NB	SB	
L		3		3	
T	1	1			
R		2	2		13
Enter	1	7	2	3	13
Exit	6	1	2	3	13

**Trip Generation  
(Pass by)**

Enter Exit  
PM   2  
Phase 1

	EB	WB	NB	SB	
L					
T					
R					0
Enter	0	0	0	0	0
Exit	0	0	0	0	0

	EB	WB	NB	SB	
L		1		1	
T				-1	
R					1
Enter	0	1	0	0	1
Exit	1	0	0	0	1

**Build  
2017**

	EB	WB	NB	SB	
L	68	33	193	16	
T	213	128	82	81	
R	368	13	59	36	1290
Enter	648	174	335	134	1290
Exit	288	357	163	482	1290

	EB	WB	NB	SB	
L	54	4	31	9	
T	1	1	202	298	
R	68	7	2	101	779
Enter	123	13	235	408	779
Exit	12	133	264	370	779

**Annual  
Adjustment  
2022**

1	1.00
2	ERROR
3	1.00

1	ERROR
2	ERROR
3	1.00

**Adjusted Raw Counts  
2022**

	EB	WB	NB	SB	
L	68	33	192	16	
T	213	128	82	81	
R	365	13	59	36	1285
Enter	646	173	333	133	1285
Exit	288	355	162	479	1285

	EB	WB	NB	SB	
L	54	0	31	5	
T	0	0	202	299	
R	68	5	0	101	765
Enter	122	5	233	405	765
Exit	5	132	261	366	765

**No Build**  
**2022**

	EB	WB	NB	SB	
L	68	33	192	16	
T	213	128	82	81	
R	365	13	59	36	1285
Enter	646	173	333	133	1285
Exit	288	355	162	479	1285

	EB	WB	NB	SB	
L	54	0	31	5	
T	0	0	202	299	
R	68	5	0	101	765
Enter	122	5	233	405	765
Exit	5	132	261	366	765

**Trip Generation**  
**(Primary)**

Enter Exit  
PM 19 38 57  
Phases 1+2

	EB	WB	NB	SB	
L	1	8			
T			3	2	
R	8		2		23
Enter	8	1	13	2	23
Exit	2	8	3	10	23

	EB	WB	NB	SB	
L	18			10	
T	3	7			
R		13	6		57
Enter	3	38	6	10	57
Exit	19	7	13	18	57

**Trip Generation**  
**(Pass by)**

Enter Exit  
PM 7 4 11  
Phases 1+2

	EB	WB	NB	SB	
L					
T					
R					0
Enter	0	0	0	0	0
Exit	0	0	0	0	0

	EB	WB	NB	SB	
L	2			4	
T	1	1	-2	-4	
R		1	2		5
Enter	1	4	0	0	5
Exit	7	1	-1	-2	5

**Build**  
**2022**

	EB	WB	NB	SB	
L	68	33	199	16	
T	213	128	85	82	
R	373	13	61	36	1308
Enter	653	174	346	135	1308
Exit	290	363	166	489	1308

	EB	WB	NB	SB	
L	54	20	31	19	
T	4	8	200	295	
R	68	19	8	101	827
Enter	126	47	239	415	827
Exit	31	140	273	383	827

# HCM Signalized Intersection Capacity Analysis

## 1: Bridge St/Jericho Rd & US2 / Main St

11/16/2016



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (vph)	56	70	116	47	207	11	263	52	22	17	55	94
Future Volume (vph)	56	70	116	47	207	11	263	52	22	17	55	94
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	11	11	11	11	11	11	11	11	11
Total Lost time (s)		6.0			6.0			6.0			6.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frbp, ped/bikes		0.94			1.00			0.99			0.93	
Flpb, ped/bikes		0.99			0.99			0.94			1.00	
Frt		0.94			0.99			0.99			0.92	
Flt Protected		0.99			0.99			0.96			0.99	
Satd. Flow (prot)		1550			1573			1597			1534	
Flt Permitted		0.87			0.91			0.68			0.95	
Satd. Flow (perm)		1370			1443			1122			1466	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	56	70	116	47	207	11	263	52	22	17	55	94
RTOR Reduction (vph)	0	34	0	0	1	0	0	3	0	0	40	0
Lane Group Flow (vph)	0	208	0	0	264	0	0	334	0	0	126	0
Confl. Peds. (#/hr)	30		30	30		30	30		30	30		30
Parking (#/hr)					0							
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		Perm	NA	
Protected Phases		2			6		3	8			4	
Permitted Phases	2			6	6		8			4		
Actuated Green, G (s)		18.7			18.7			26.1			26.1	
Effective Green, g (s)		18.7			18.7			26.1			26.1	
Actuated g/C Ratio		0.30			0.30			0.43			0.43	
Clearance Time (s)		6.0			6.0			6.0			6.0	
Vehicle Extension (s)		4.0			4.0			3.0			2.0	
Lane Grp Cap (vph)		417			439			476			623	
v/s Ratio Prot												
v/s Ratio Perm		0.15			0.18			0.30			0.09	
v/c Ratio		0.50			0.60			0.70			0.20	
Uniform Delay, d1		17.5			18.2			14.5			11.1	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		1.3			2.7			4.8			0.1	
Delay (s)		18.8			20.9			19.2			11.2	
Level of Service		B			C			B			B	
Approach Delay (s)		18.8			20.9			19.2			11.2	
Approach LOS		B			C			B			B	

### Intersection Summary

HCM 2000 Control Delay	18.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	61.4	Sum of lost time (s)	19.0
Intersection Capacity Utilization	66.8%	ICU Level of Service	C
Analysis Period (min)	60		

Description: US-2 / Jericho Rd/Bridge St

c Critical Lane Group

HCM 2010 TWSC  
2: Bridge St & Railroad St/Jolina Ct

11/16/2016

Intersection												
Int Delay, s/veh	1.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	25	0	15	1	0	5	16	415	4	4	156	27
Future Vol, veh/h	25	0	15	1	0	5	16	415	4	4	156	27
Conflicting Peds, #/hr	0	0	0	0	0	0	9	0	0	0	0	9
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	25	0	15	1	0	5	16	415	4	4	156	27
Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	639	638	179	634	649	417	192	0	0	419	0	0
Stage 1	187	187	-	449	449	-	-	-	-	-	-	-
Stage 2	452	451	-	185	200	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	389	394	864	392	389	636	1381	-	-	1140	-	-
Stage 1	815	745	-	589	572	-	-	-	-	-	-	-
Stage 2	587	571	-	817	736	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	377	384	857	380	379	636	1381	-	-	1140	-	-
Mov Cap-2 Maneuver	377	384	-	380	379	-	-	-	-	-	-	-
Stage 1	796	736	-	580	563	-	-	-	-	-	-	-
Stage 2	574	562	-	799	727	-	-	-	-	-	-	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	13.2			11.4			0.3			0.2		
HCM LOS	B			B								
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR				
Capacity (veh/h)	1381	-	-	477	572	1140	-	-				
HCM Lane V/C Ratio	0.012	-	-	0.084	0.01	0.004	-	-				
HCM Control Delay (s)	7.6	0	-	13.2	11.4	8.2	0	-				
HCM Lane LOS	A	A	-	B	B	A	A	-				
HCM 95th %tile Q(veh)	0	-	-	0.3	0	0	-	-				

# HCM Signalized Intersection Capacity Analysis

## 1: Bridge St/Jericho Rd & US2 / Main St

11/16/2016



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (vph)	68	213	368	33	128	13	193	82	59	16	81	36
Future Volume (vph)	68	213	368	33	128	13	193	82	59	16	81	36
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	11	11	11	11	11	11	11	11	11
Total Lost time (s)		6.0			6.0			6.0			6.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frbp, ped/bikes		0.92			0.99			0.98			0.96	
Flpb, ped/bikes		0.99			1.00			0.94			0.99	
Frt		0.92			0.99			0.98			0.96	
Flt Protected		0.99			0.99			0.97			0.99	
Satd. Flow (prot)		1507			1572			1572			1650	
Flt Permitted		0.95			0.85			0.77			0.94	
Satd. Flow (perm)		1434			1355			1251			1560	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	68	213	368	33	128	13	193	82	59	16	81	36
RTOR Reduction (vph)	0	38	0	0	2	0	0	10	0	0	13	0
Lane Group Flow (vph)	0	611	0	0	172	0	0	324	0	0	120	0
Confl. Peds. (#/hr)	30		30	30		30	30		30	30		30
Parking (#/hr)					0							
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		Perm	NA	
Protected Phases		2			6		3	8			4	
Permitted Phases	2			6	6		8			4		
Actuated Green, G (s)		32.8			32.8			24.7			24.7	
Effective Green, g (s)		32.8			32.8			24.7			24.7	
Actuated g/C Ratio		0.44			0.44			0.33			0.33	
Clearance Time (s)		6.0			6.0			6.0			6.0	
Vehicle Extension (s)		4.0			4.0			3.0			2.0	
Lane Grp Cap (vph)		634			599			417			520	
v/s Ratio Prot												
v/s Ratio Perm		c0.43			0.13			c0.26			0.08	
v/c Ratio		0.96			0.29			0.78			0.23	
Uniform Delay, d1		20.1			13.2			22.2			17.8	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		42.6			0.4			9.4			0.1	
Delay (s)		62.6			13.5			31.6			17.9	
Level of Service		E			B			C			B	
Approach Delay (s)		62.6			13.5			31.6			17.9	
Approach LOS		E			B			C			B	

### Intersection Summary

HCM 2000 Control Delay	43.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	74.1	Sum of lost time (s)	19.0
Intersection Capacity Utilization	81.0%	ICU Level of Service	D
Analysis Period (min)	60		

Description: US-2 / Jericho Rd/Bridge St

c Critical Lane Group

HCM 2010 TWSC  
2: Bridge St & Railroad St/Jolina Ct

11/16/2016

Intersection												
Int Delay, s/veh	3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	54	1	68	4	1	7	31	202	2	9	298	101
Future Vol, veh/h	54	1	68	4	1	7	31	202	2	9	298	101
Conflicting Peds, #/hr	2	0	0	0	0	2	16	0	0	0	0	16
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None									
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	54	1	68	4	1	7	31	202	2	9	298	101

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	654	649	365	666	698	205	415	0	0	204	0	0
Stage 1	383	383	-	265	265	-	-	-	-	-	-	-
Stage 2	271	266	-	401	433	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	380	389	680	373	364	836	1144	-	-	1368	-	-
Stage 1	640	612	-	740	689	-	-	-	-	-	-	-
Stage 2	735	689	-	626	582	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	359	368	671	324	345	835	1144	-	-	1366	-	-
Mov Cap-2 Maneuver	359	368	-	324	345	-	-	-	-	-	-	-
Stage 1	611	598	-	717	668	-	-	-	-	-	-	-
Stage 2	704	668	-	557	569	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	15	12.3	1.1	0.2
HCM LOS	C	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1144	-	-	483	508	1366	-	-
HCM Lane V/C Ratio	0.027	-	-	0.255	0.024	0.007	-	-
HCM Control Delay (s)	8.2	0	-	15	12.3	7.7	0	-
HCM Lane LOS	A	A	-	C	B	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	1	0.1	0	-	-

# HCM Signalized Intersection Capacity Analysis

## 1: Bridge St/Jericho Rd & US2 / Main St

11/16/2016



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (vph)	56	70	116	47	207	11	261	51	22	17	55	94
Future Volume (vph)	56	70	116	47	207	11	261	51	22	17	55	94
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	11	11	11	11	11	11	11	11	11
Total Lost time (s)		6.0			6.0			6.0			6.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frbp, ped/bikes		0.94			1.00			0.99			0.93	
Flpb, ped/bikes		0.99			0.99			0.94			1.00	
Frt		0.94			0.99			0.99			0.92	
Flt Protected		0.99			0.99			0.96			0.99	
Satd. Flow (prot)		1550			1573			1597			1535	
Flt Permitted		0.87			0.91			0.68			0.95	
Satd. Flow (perm)		1370			1443			1120			1466	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	56	70	116	47	207	11	261	51	22	17	55	94
RTOR Reduction (vph)	0	34	0	0	1	0	0	3	0	0	40	0
Lane Group Flow (vph)	0	208	0	0	264	0	0	331	0	0	126	0
Confl. Peds. (#/hr)	30		30	30		30	30		30	30		30
Parking (#/hr)					0							
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		Perm	NA	
Protected Phases		2			6		3	8			4	
Permitted Phases	2			6	6		8			4		
Actuated Green, G (s)		18.6			18.6			25.9			25.9	
Effective Green, g (s)		18.6			18.6			25.9			25.9	
Actuated g/C Ratio		0.30			0.30			0.42			0.42	
Clearance Time (s)		6.0			6.0			6.0			6.0	
Vehicle Extension (s)		4.0			4.0			3.0			2.0	
Lane Grp Cap (vph)		417			439			474			621	
v/s Ratio Prot												
v/s Ratio Perm		0.15			0.18			0.30			0.09	
v/c Ratio		0.50			0.60			0.70			0.20	
Uniform Delay, d1		17.4			18.1			14.4			11.1	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		1.3			2.7			4.6			0.1	
Delay (s)		18.7			20.8			19.0			11.2	
Level of Service		B			C			B			B	
Approach Delay (s)		18.7			20.8			19.0			11.2	
Approach LOS		B			C			B			B	

### Intersection Summary

HCM 2000 Control Delay	18.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	61.1	Sum of lost time (s)	19.0
Intersection Capacity Utilization	66.6%	ICU Level of Service	C
Analysis Period (min)	60		

Description: US-2 / Jericho Rd/Bridge St

c Critical Lane Group

HCM 2010 TWSC  
2: Bridge St & Railroad St/Jolina Ct

11/16/2016

Intersection												
Int Delay, s/veh	1.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	25	0	15	0	0	2	16	415	1	3	156	27
Future Vol, veh/h	25	0	15	0	0	2	16	415	1	3	156	27
Conflicting Peds, #/hr	0	0	0	0	0	0	9	0	0	0	0	9
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	25	0	15	0	0	2	16	415	1	3	156	27
Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	688	687	193	685	700	452	208	0	0	452	0	0
Stage 1	200	200	-	486	486	-	-	-	-	-	-	-
Stage 2	488	487	-	199	214	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	360	370	849	362	363	608	1363	-	-	1109	-	-
Stage 1	802	736	-	563	551	-	-	-	-	-	-	-
Stage 2	561	550	-	803	725	-	-	-	-	-	-	-
Platoon blocked, %												
Mov Cap-1 Maneuver	350	360	842	350	353	608	1363	-	-	1109	-	-
Mov Cap-2 Maneuver	350	360	-	350	353	-	-	-	-	-	-	-
Stage 1	782	728	-	553	542	-	-	-	-	-	-	-
Stage 2	549	541	-	785	717	-	-	-	-	-	-	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	13.9			10.9			0.3			0.1		
HCM LOS	B			B								
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR				
Capacity (veh/h)	1363	-	-	448	608	1109	-	-				
HCM Lane V/C Ratio	0.013	-	-	0.097	0.004	0.003	-	-				
HCM Control Delay (s)	7.7	0	-	13.9	10.9	8.3	0	-				
HCM Lane LOS	A	A	-	B	B	A	A	-				
HCM 95th %tile Q(veh)	0	-	-	0.3	0	0	-	-				

# HCM Signalized Intersection Capacity Analysis

## 1: Bridge St/Jericho Rd & US2 / Main St

11/16/2016



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (vph)	68	213	365	33	128	13	192	82	59	16	81	36
Future Volume (vph)	68	213	365	33	128	13	192	82	59	16	81	36
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	11	11	11	11	11	11	11	11	11
Total Lost time (s)		6.0			6.0			6.0			6.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frbp, ped/bikes		0.92			0.99			0.98			0.96	
Flpb, ped/bikes		0.99			1.00			0.94			0.99	
Frt		0.92			0.99			0.98			0.96	
Flt Protected		0.99			0.99			0.97			0.99	
Satd. Flow (prot)		1508			1572			1572			1650	
Flt Permitted		0.95			0.85			0.77			0.94	
Satd. Flow (perm)		1435			1356			1252			1560	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	68	213	365	33	128	13	192	82	59	16	81	36
RTOR Reduction (vph)	0	38	0	0	2	0	0	11	0	0	13	0
Lane Group Flow (vph)	0	608	0	0	172	0	0	322	0	0	120	0
Confl. Peds. (#/hr)	30		30	30		30	30		30	30		30
Parking (#/hr)					0							
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		Perm	NA	
Protected Phases		2			6		3	8			4	
Permitted Phases	2			6	6		8			4		
Actuated Green, G (s)		32.8			32.8			24.6			24.6	
Effective Green, g (s)		32.8			32.8			24.6			24.6	
Actuated g/C Ratio		0.44			0.44			0.33			0.33	
Clearance Time (s)		6.0			6.0			6.0			6.0	
Vehicle Extension (s)		4.0			4.0			3.0			2.0	
Lane Grp Cap (vph)		636			601			416			518	
v/s Ratio Prot												
v/s Ratio Perm		c0.42			0.13			c0.26			0.08	
v/c Ratio		0.96			0.29			0.77			0.23	
Uniform Delay, d1		19.9			13.1			22.2			17.9	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		38.2			0.4			9.3			0.1	
Delay (s)		58.1			13.5			31.5			17.9	
Level of Service		E			B			C			B	
Approach Delay (s)		58.1			13.5			31.5			17.9	
Approach LOS		E			B			C			B	

### Intersection Summary

HCM 2000 Control Delay	41.0	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	74.0	Sum of lost time (s)	19.0
Intersection Capacity Utilization	80.7%	ICU Level of Service	D
Analysis Period (min)	60		

Description: US-2 / Jericho Rd/Bridge St

c Critical Lane Group

HCM 2010 TWSC  
 2: Bridge St & Railroad St/Jolina Ct

11/16/2016

Intersection												
Int Delay, s/veh	3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	54	0	68	0	0	5	31	202	0	5	299	101
Future Vol, veh/h	54	0	68	0	0	5	31	202	0	5	299	101
Conflicting Peds, #/hr	2	0	0	0	0	2	16	0	0	0	0	16
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None									
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	54	0	68	0	0	5	31	202	0	5	299	101

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	699	694	396	715	749	222	451	0	0	220	0	0
Stage 1	407	407	-	287	287	-	-	-	-	-	-	-
Stage 2	292	287	-	428	462	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	354	366	653	346	341	818	1109	-	-	1349	-	-
Stage 1	621	597	-	720	674	-	-	-	-	-	-	-
Stage 2	716	674	-	605	565	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	336	347	644	297	323	817	1109	-	-	1347	-	-
Mov Cap-2 Maneuver	336	347	-	297	323	-	-	-	-	-	-	-
Stage 1	591	586	-	695	650	-	-	-	-	-	-	-
Stage 2	685	650	-	533	554	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	16.1	9.4	1.1	0.1
HCM LOS	C	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1109	-	-	458	817	1347	-
HCM Lane V/C Ratio	0.03	-	-	0.29	0.007	0.004	-
HCM Control Delay (s)	8.3	0	-	16.1	9.4	7.7	0
HCM Lane LOS	A	A	-	C	A	A	A
HCM 95th %tile Q(veh)	0.1	-	-	1.2	0	0	-

# HCM Signalized Intersection Capacity Analysis

## 1: Bridge St/Jericho Rd & US2 / Main St

11/16/2016



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (vph)	56	70	121	49	207	11	268	53	22	17	57	94
Future Volume (vph)	56	70	121	49	207	11	268	53	22	17	57	94
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	11	11	11	11	11	11	11	11	11
Total Lost time (s)		6.0			6.0			6.0			6.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frbp, ped/bikes		0.94			0.99			0.99			0.93	
Flpb, ped/bikes		0.99			0.99			0.94			1.00	
Frt		0.93			0.99			0.99			0.92	
Flt Protected		0.99			0.99			0.96			0.99	
Satd. Flow (prot)		1545			1572			1596			1536	
Flt Permitted		0.87			0.91			0.68			0.95	
Satd. Flow (perm)		1366			1437			1129			1468	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	56	70	121	49	207	11	268	53	22	17	57	94
RTOR Reduction (vph)	0	36	0	0	1	0	0	3	0	0	38	0
Lane Group Flow (vph)	0	211	0	0	266	0	0	340	0	0	130	0
Confl. Peds. (#/hr)	30		30	30		30	30		30	30		30
Parking (#/hr)					0							
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		Perm	NA	
Protected Phases		2			6		3	8				4
Permitted Phases	2			6	6		8			4		
Actuated Green, G (s)		18.9			18.9			26.8				26.8
Effective Green, g (s)		18.9			18.9			26.8				26.8
Actuated g/C Ratio		0.30			0.30			0.43				0.43
Clearance Time (s)		6.0			6.0			6.0				6.0
Vehicle Extension (s)		4.0			4.0			3.0				2.0
Lane Grp Cap (vph)		414			435			485				631
v/s Ratio Prot												
v/s Ratio Perm		0.15			0.18			0.30				0.09
v/c Ratio		0.51			0.61			0.70				0.21
Uniform Delay, d1		17.9			18.6			14.5				11.1
Progression Factor		1.00			1.00			1.00				1.00
Incremental Delay, d2		1.4			2.9			4.7				0.1
Delay (s)		19.3			21.5			19.2				11.2
Level of Service		B			C			B				B
Approach Delay (s)		19.3			21.5			19.2				11.2
Approach LOS		B			C			B				B

### Intersection Summary

HCM 2000 Control Delay	18.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	62.3	Sum of lost time (s)	19.0
Intersection Capacity Utilization	67.2%	ICU Level of Service	C
Analysis Period (min)	60		

Description: US-2 / Jericho Rd/Bridge St

c Critical Lane Group

HCM 2010 TWSC  
2: Bridge St & Railroad St/Jolina Ct

11/16/2016

Intersection													
Int Delay, s/veh	1.5												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		↕			↕			↕				↕	
Traffic Vol, veh/h	25	2	15	4	1	11	16	415	27	14	156	27	
Future Vol, veh/h	25	2	15	4	1	11	16	415	27	14	156	27	
Conflicting Peds, #/hr	0	0	0	0	0	0	9	0	0	0	0	9	
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free	
RT Channelized	-	-	None										
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-	
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-	
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-	
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92	
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	
Mvmt Flow	25	2	15	4	1	11	16	415	27	14	156	27	

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	731	739	193	725	739	466	208	0	0	480	0	0
Stage 1	224	224	-	501	501	-	-	-	-	-	-	-
Stage 2	507	515	-	224	238	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	337	345	849	340	345	597	1363	-	-	1082	-	-
Stage 1	779	718	-	552	543	-	-	-	-	-	-	-
Stage 2	548	535	-	779	708	-	-	-	-	-	-	-
Platoon blocked, %												
Mov Cap-1 Maneuver	319	331	842	323	331	597	1363	-	-	1082	-	-
Mov Cap-2 Maneuver	319	331	-	323	331	-	-	-	-	-	-	-
Stage 1	760	701	-	543	534	-	-	-	-	-	-	-
Stage 2	527	526	-	749	691	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	14.9	12.9	0.3	0.6
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1363	-	-	411	473	1082	-
HCM Lane V/C Ratio	0.013	-	-	0.111	0.037	0.014	-
HCM Control Delay (s)	7.7	0	-	14.9	12.9	8.4	0
HCM Lane LOS	A	A	-	B	B	A	A
HCM 95th %tile Q(veh)	0	-	-	0.4	0.1	0	-

# HCM Signalized Intersection Capacity Analysis

## 1: Bridge St/Jericho Rd & US2 / Main St

11/16/2016



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (vph)	68	213	373	33	128	13	199	85	61	16	82	36
Future Volume (vph)	68	213	373	33	128	13	199	85	61	16	82	36
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	11	11	11	11	11	11	11	11	11
Total Lost time (s)		6.0			6.0			6.0			6.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frbp, ped/bikes		0.92			0.99			0.97			0.96	
Flpb, ped/bikes		0.99			1.00			0.94			1.00	
Frt		0.92			0.99			0.98			0.96	
Flt Protected		0.99			0.99			0.97			0.99	
Satd. Flow (prot)		1504			1572			1571			1651	
Flt Permitted		0.95			0.85			0.77			0.94	
Satd. Flow (perm)		1431			1352			1248			1560	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	68	213	373	33	128	13	199	85	61	16	82	36
RTOR Reduction (vph)	0	39	0	0	2	0	0	10	0	0	13	0
Lane Group Flow (vph)	0	615	0	0	172	0	0	335	0	0	121	0
Confl. Peds. (#/hr)	30		30	30		30	30		30	30		30
Parking (#/hr)					0							
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		Perm	NA	
Protected Phases		2			6		3	8			4	
Permitted Phases	2			6	6		8			4		
Actuated Green, G (s)		32.9			32.9			25.6			25.6	
Effective Green, g (s)		32.9			32.9			25.6			25.6	
Actuated g/C Ratio		0.44			0.44			0.34			0.34	
Clearance Time (s)		6.0			6.0			6.0			6.0	
Vehicle Extension (s)		4.0			4.0			3.0			2.0	
Lane Grp Cap (vph)		626			592			425			531	
v/s Ratio Prot												
v/s Ratio Perm		c0.43			0.13			c0.27			0.08	
v/c Ratio		0.98			0.29			0.79			0.23	
Uniform Delay, d1		20.8			13.6			22.3			17.7	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		55.9			0.4			10.0			0.1	
Delay (s)		76.7			14.0			32.3			17.8	
Level of Service		E			B			C			B	
Approach Delay (s)		76.7			14.0			32.3			17.8	
Approach LOS		E			B			C			B	

### Intersection Summary

HCM 2000 Control Delay	50.6	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.93		
Actuated Cycle Length (s)	75.1	Sum of lost time (s)	19.0
Intersection Capacity Utilization	81.9%	ICU Level of Service	D
Analysis Period (min)	60		

Description: US-2 / Jericho Rd/Bridge St

c Critical Lane Group

HCM 2010 TWSC  
2: Bridge St & Railroad St/Jolina Ct

11/16/2016

Intersection												
Int Delay, s/veh	3.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	54	4	68	20	8	19	31	200	8	19	295	101
Future Vol, veh/h	54	4	68	20	8	19	31	200	8	19	295	101
Conflicting Peds, #/hr	2	0	0	0	0	2	16	0	0	0	0	16
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	54	4	68	20	8	19	31	200	8	19	295	101
Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	682	670	362	686	716	206	412	0	0	208	0	0
Stage 1	400	400	-	266	266	-	-	-	-	-	-	-
Stage 2	282	270	-	420	450	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	364	378	683	362	356	835	1147	-	-	1363	-	-
Stage 1	626	602	-	739	689	-	-	-	-	-	-	-
Stage 2	725	686	-	611	572	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	331	355	673	311	334	834	1147	-	-	1361	-	-
Mov Cap-2 Maneuver	331	355	-	311	334	-	-	-	-	-	-	-
Stage 1	598	583	-	716	668	-	-	-	-	-	-	-
Stage 2	677	665	-	536	554	-	-	-	-	-	-	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	15.9			14.6			1.1			0.4		
HCM LOS	C			B								
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR				
Capacity (veh/h)	1147	-	-	457	423	1361	-	-				
HCM Lane V/C Ratio	0.027	-	-	0.276	0.111	0.014	-	-				
HCM Control Delay (s)	8.2	0	-	15.9	14.6	7.7	0	-				
HCM Lane LOS	A	A	-	C	B	A	A	-				
HCM 95th %tile Q(veh)	0.1	-	-	1.1	0.4	0	-	-				

APRIL 20 A.D. 2018  
At 11 o'clock 30 minutes A.M. and recorded in  
Book 2114 Page 90-95 of Land Records  
Attest: Mumma Law Assoc Town Clerk

**Town of Richmond  
Development Review Board  
Final Decision –April 11, 2018**

**IN RE:**

Buttermilk LLC – Application # 18-020 for PUD, Conditional Use & Site Plan Review for the construction of a 4-story, mixed-use building at parcel JC0074, 74 Jolina Court, Richmond, located within the Village/Commercial (V/C) Zoning District.

hs  
328c

Applicant / Property Owner: Buttermilk, LLC  
Property Address: 74 Jolina Court  
Parcel #: JC0074  
Size in Acres: 5.84 acres (plus .16 acre BR0125)  
Zoning District: Village Commercial Zoning District

**SUBMITTALS:**

- A. PUD, Conditional Use & Site Plan Application, dated 03/16/2018
- B. Buttermilk Cover Letter, dated 03/16/2018
- C. Selectboard decision Application 16-114, dated 12/28/2016
- D. Selectboard decision Application 17-025, dated 04/17/2017
- E. Phase I/II Plan, prepared by Grenier Eng., dated 03/30/2018
- F. 1-3 Floorplans, undated
- G. 1-3 Elevations, undated
- H. Lighting fixtures, dated 10/19/2016, 3 pages
- I. Portion of Traffic Study from RSG, dated 11/28/2016, 8 pages
- J. Overall Site Plan Phase I, approved with SB 17-025 decision, dated 3/21/17
- K. Phase 2/3 Plan, presented to SB with 16-114 application, dated 11/30/16

**PROCEDURAL INFORMATION:**

On December 28, 2016 the Richmond Selectboard issued a Final Decision for Buttermilk's Application 16-114 for PUD, Conditional Use & Site Plan Review for the construction of a 4-story, mixed-use building at parcel BR0125, then located within the Jolina Court Interim Zoning District (JCIZD). This approval was only for Phase I. On April 17, 2017 the Selectboard issued a Final Decision for Buttermilk's Application 17-025 for amending the approved site plan to change the configuration of the parking lot, stormwater, water and sewer utilities for the mixed-use building at parcel BR0125, then located within the JCIZD.

The Richmond Zoning Regulations were amended to include the Jolina Court Interim Zoning District (JCIZD) May 27, 2014 and were extended for one-year May 23, 2016. The JCIZD required the Selectboard to issue approval for any redevelopment. With the expiration of the JCIZD in May of 2017, the parcel now reverts to the prior zoning district for the parcel- Village/Commercial Zoning District (V/C) and is under the purview of the DRB.

Buttermilk received a permit (18-009) on February 15, 2018 for the construction of a 14,440 sq. ft mixed use commercial and residential building- Phase I.

As per the Notice Requirements, a Notice for Public Hearing appeared in the Burlington Free Press on March 24, 2018. The Notice was also posted at four locations within the Town. The Referral Notice and Notice Poster to the applicant, as well as notice to adjoining landowners, were sent on March 23, 2018.

**FINDINGS OF FACT:**

1. The proposed project is subject to review under the following regulations:
  - a. Richmond Zoning Regulations, Village Commercial Zoning District
  - b. Planned Unit Development (PUD) (see Section 5.12 of Richmond Zoning Regulations)
  - c. Site Plan Review (see Section 5.5 of Richmond Zoning Regulations)
  - d. Conditional Use Review (see Section 5.6 of Richmond Zoning Regulations)
  - e. Public Improvement Standards and Specifications for the Town of Richmond
2. The proposed project affects one parcel- JC0074. The applicant is explicitly seeking approval for Phase II under this application. Phase II proposes one building on parcel JC0074. Both JC0074 and BR0125 are owned by the applicant, Buttermilk LLC.
3. The applicant has presented an executed License agreement between JC0074 and adjoining property owners of JC0013 to P&Z staff on February 14, 2018.
4. The applicant is required to present to P&Z staff prior to receiving a CO for Phase I, an executed easement agreement between BR0125 and JC0074 and the plat is to be filed referencing agreements. The applicant does not intend to merge the two parcels at this time.
5. The Selectboard approved a waiver for the internal setback between BR0125 and JC0074, the perimeter setbacks of JC0074 is still applicable. The proposed building meets the perimeter setbacks between BR0125 and the adjoining cemetery parcel.
6. The JCIZD allowed lot coverage up to 80% of the combined developable area of BR0125 and JC0074. The V/C only allows lot coverage of 50%. Due to wetland buffer and the portion of the parcel that is in the flood hazard area, only 2.99 acres for the two lots combined is developable.
7. Short and Long Term Traffic Impacts have been addressed in Phase I approval. No additional traffic study was submitted for Phase II. The applicant submitted the traffic study that was completed for Phase I and it included speculative effects of Phase II and III (Submittal I).
8. The proposed building will front on Jolina Court and have a footprint of approximately 8,000 sq. ft.
9. The building will have 4 floors (one partially sub-grade, and a second slightly sub-grade) and based upon the Submittal E-3, the average building height around the perimeter from pre-construction grade will be 34.25 ft., and will therefore not exceed the 35 ft. height requirement.
10. The mixed use building is proposed to contain a total of 4 floors. The first 2 floors will be mixed commercial space totaling 16,000 sq. ft. defined as any combination of bank,

- retail store, personal service, professional office, light industry, deli/take out eatery – with no seats).
11. With Application 17-025, the applicant presented adequate parking for the mixed commercial/residential space, based upon the IZ recommended parking requirements, showing 63 spaces (submittal H). The SB required that the applicant have at least 40 spaces for Phase I in decision 16-114. This application for Building 2 requires 98 spaces. Submittal E shows 135 spaces.
  12. The parking requirements from the SB decision 16-114 required that all parking areas to be paved upon completion of Phase II.
  13. The top 2 floors shall be residential units totaling 20 housing units, based upon Submittal F-3 and narrative. The RZR PUD General Conditions (Section 5.12.2 f) state that all mixed use projects shall contain a residential to commercial floor area ratio of 50% residential to 50% commercial, but the JCIZD required all mixed use projects to contain a residential to commercial area ratio of 40% residential to 60% commercial. However, the Selectboard decision allowed Phase I to be 50% residential and 50% commercial but upon completion of Phase II the entire development area shall contain 40% residential to 60% commercial.
  14. No landscaping plan was submitted with this application, just the projection that they intend to spend at least \$30,000 on landscaping. A series of shrubs and trees (such as lilacs and dogwoods) will be planted along the north and south side of the building. Trees such as honey locust to be along the sidewalk to the parking.
  15. The dumpsters in the parking lot are not screened.
  16. There will be 12ft pole mounted LED street lights in the parking area. They will be down-cast and shielded, energy efficient as specified within the lighting sheet. The exterior of the building will contain a similar down-cast and shielded, energy efficient lights at each of the exterior doors, as per sheet WPLED10DC (Submittal H.)
  17. A sidewalk will be built along the northside of the building from the Bridge Street intersection eastward and along the southern boundary of the parking lot, located on JC0074 and in front of Phase II.
  18. The private road will be upgraded to meet the Richmond Public Improvement Standards and Specifications construction standards. The Richmond Public Improvement Standards and Specifications require required local roads to have a 60' right-of-way (ROW). The proposed upgraded road does not have a 60' ROW. The SB waived the 60' ROW standard for this project.
  19. The applicant provided letters from the police, fire, rescue and an email from the schools for Phase I, but none for Phase II.

**DECISION:**

The DRB approves application 18-020 subject to the following conditions:

1. All conditions of prior Selectboard approvals, 16-114 and 17-025, must be complied with.
2. Applicant shall submit a letter from fire department to P&Z staff stating their ability to service the proposed Building 2 prior to receiving a zoning permit.

3. Applicant shall submit to P&Z and file in the Land Records an executed easement with the railroad for the proposed parking spaces on railroad land prior to receiving a zoning permit.
4. Applicant shall submit a revised landscaping plan to P&Z showing screening of all dumpsters and the DRB encourages applicant to consult with the Cemetery Committee to construct a fence between BR0125, JC0074 and BR0151.
5. The project shall be developed in conformance with the above referenced survey plat, plans, and submittal documents.
6. Any other applicable zoning regulations not expressly waived in this decision must be complied with.
7. This decision shall not relieve the applicant from any obligation to obtain all other applicable required federal, state and local permits.

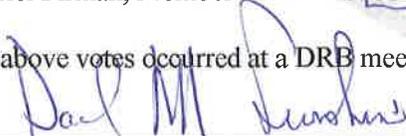
The application as approved shall be in conformance with the decision, referenced items, the findings of facts, and conditions. The applicants and interested parties are hereby notified that if they disagree with this decision, they have the right, under 24 V.S.A. 4471, to appeal to the Vermont Superior Court – Environmental Division.

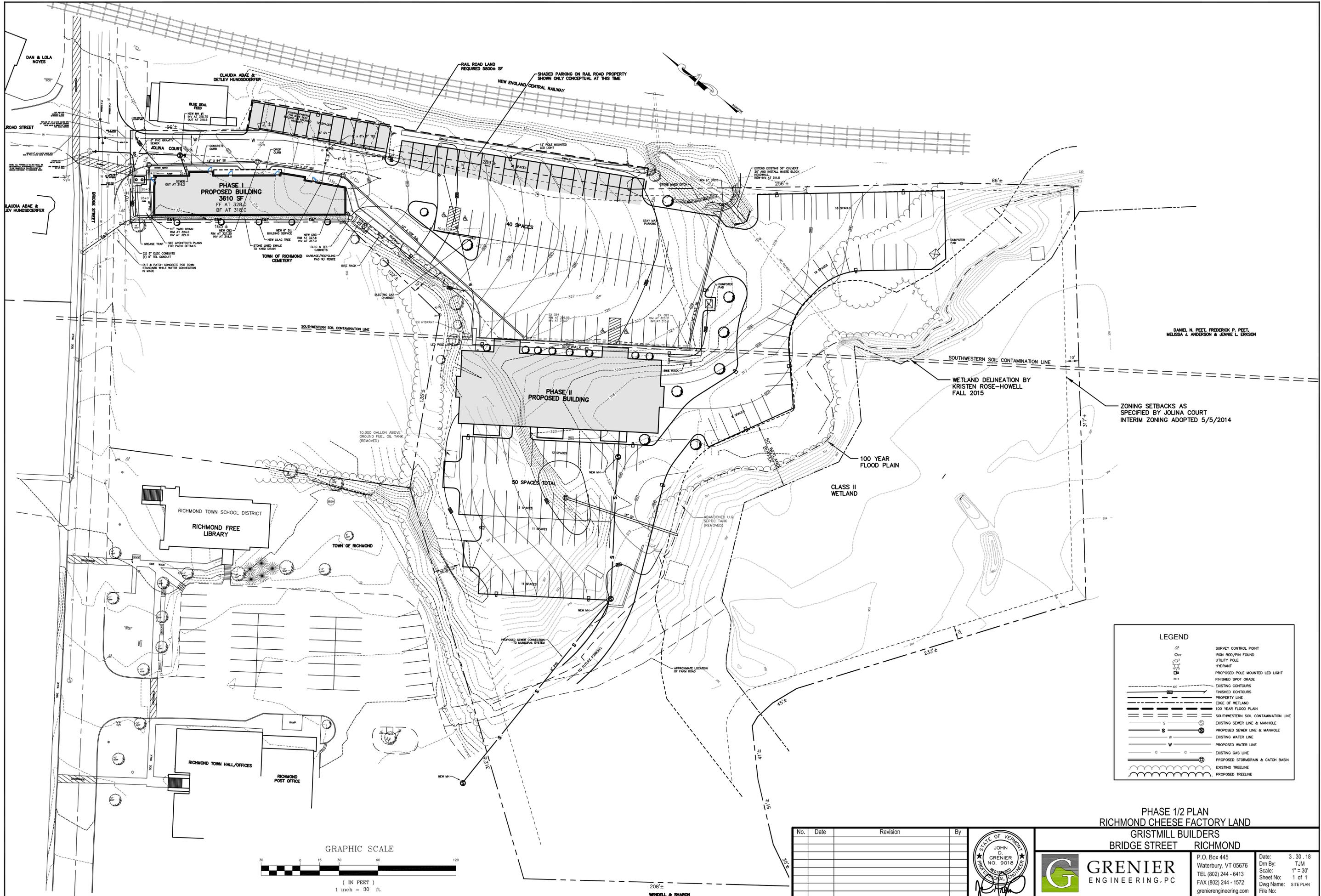
The appeal must be filed within thirty days of the date of this decision, and be in accordance with the governing rules of procedure and rules of the Vermont Superior Court - Environmental Division. Title 24 Vermont Statutes Annotated, Section 4471 provides that “An interested person who has participated in a municipal regulatory proceeding authorized under this title may appeal a decision rendered in that proceeding by an appropriate municipal panel to the environmental court. Participation in a local regulatory proceeding shall consist of offering, through oral or written testimony, evidence or a statement of concern related to the subject of the proceeding.

**DRB VOTING ON THIS MATTER (circle one for each member):**

David Sunshine, Chair	in <b>FAVOR</b>	AGAINST	ABSTAINING	RECUSED	ABSENT
Ian Bender, Vice-Chair	in <b>FAVOR</b>	AGAINST	ABSTAINING	RECUSED	ABSENT
Matthew Dyer, Member	in <b>FAVOR</b>	AGAINST	ABSTAINING	RECUSED	ABSENT
Roger Pedersen, Member	in <b>FAVOR</b>	AGAINST	ABSTAINING	RECUSED	ABSENT
Gabriel Firman, Member	in <b>FAVOR</b>	AGAINST	ABSTAINING	RECUSED	ABSENT

The above votes occurred at a DRB meeting on 11<sup>th</sup> day of April, 2018

 DATED this 20<sup>TH</sup> DAY OF APRIL 2018  
 David Sunshine  
 Richmond Development Review Board

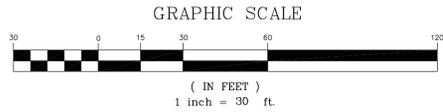


DANIEL N. PEET, FREDERICK P. PEET,  
MELISSA J. ANDERSON & JENNIE L. ERICSON

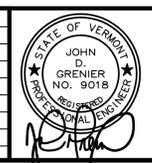
ZONING SETBACKS AS SPECIFIED BY JOLINA COURT INTERIM ZONING ADOPTED 5/5/2014

**LEGEND**

	SURVEY CONTROL POINT
	IRON ROD/PIN FOUND
	UTILITY POLE
	HYDRANT
	PROPOSED POLE MOUNTED LED LIGHT
	FINISHED SPOT GRADE
	EXISTING CONTOURS
	PROPOSED CONTOURS
	PROPERTY LINE
	EDGE OF WETLAND
	100 YEAR FLOOD PLAIN
	SOUTHWESTERN SOIL CONTAMINATION LINE
	EXISTING SEWER LINE & MANHOLE
	PROPOSED SEWER LINE & MANHOLE
	EXISTING WATER LINE
	PROPOSED WATER LINE
	EXISTING GAS LINE
	PROPOSED STORMDRAIN & CATCH BASIN
	EXISTING TREELINE
	PROPOSED TREELINE



No.	Date	Revision	By



**PHASE 1/2 PLAN**  
**RICHMOND CHEESE FACTORY LAND**  
**GRISTMILL BUILDERS**  
 BRIDGE STREET RICHMOND

**GRENIER ENGINEERING, PC**

P.O. Box 445  
 Waterbury, VT 05676  
 TEL (802) 244 - 6413  
 FAX (802) 244 - 1572  
 grenierengineering.com

Date: 3.30.18  
 Dm By: TJM  
 Scale: 1" = 30'  
 Sheet No: 1 of 1  
 Dwg Name: SITE PLAN  
 File No:

208 ±  
 WENDELL & SHARON

## Section 4 - Regulations Applying to All Lots

### 4.12 *[add]* Height of Buildings and Structures

4.12.1 The height of a building shall not exceed 35 feet. In buildings with steeply pitched roofs in which there is no occupancy above 35 feet, the building height may not exceed 45 feet.

4.12.2 Structures on the roof of a building such as spires, chimneys, cupolas, rooftop solar collectors, domes and belfries may extend up to 45 feet from the average finished grade. Rooftop antennae may extend to 47 feet. [24 V.S.A. §4412 (6 and 8A)]

4.12.3 All single-family and two-family dwelling uses buildings which do not require a construction permit from the Vermont Division of Fire Safety must include an egress window with a lower sill or threshold that does not exceed 32 feet from adjacent finished grade, and meet all applicable municipal and state fire safety codes.

4.12.4 All single-family and two-family dwelling uses buildings which do not require a construction permit from the Vermont Division of Fire Safety shall have at least one point where the threshold of the roof is no higher than 32 feet from the adjacent finished grade to allow for ladder access to the roof by fire and rescue personnel.

4.12.5 For all Conditional Use and Site Plan Review applications, applicants must consult with the Richmond Fire Department prior to applying. All Conditional Use and Site Plan Review applications must include a letter of recommendations from the Richmond Fire Department. The DRB shall take into consideration the recommendations the Richmond Fire Department in its review. Permit conditions may include recommendations from the Richmond Fire Department, so long as the recommendations promote the health, safety and general welfare of the inhabitants of the Town of Richmond.

4.12.6 Farm accessory buildings are exempt from the 35-foot height restriction, providing there is no habitation above 35 feet.

4.12.7 The height of wireless telecommunication facilities other than rooftop antennae shall be governed by section 6.12 of these regulations and 24 VSA S. 4412 (8B and C).

***[the new section 4.12 will be referenced to replace all mentions of height in "Dimensional Limitations for Structures" in all the specific zoning districts including the pending JCZD]***

TO: Richmond Planning Commission

FROM: Ravi Venkataraman, Town Planner

DATE: February 27, 2020

SUBJECT: Summary of changes to Village Downtown Zoning District Regulations

Since the February 19, 2020 Planning Commission meeting, changes (in redline) have been made to the draft regulations for the Village Downtown Zoning Regulations for the following reasons:

1. Compatibility with the Jolina Court Zoning District regulations – This was suggested during the prior Planning Commission meetings. The approvable uses, height regulations, and traffic impact sections have been changed to align with the language in the Jolina Court Zoning District regulations.
2. Addition of PS0014 – John Linn of Hillview Design Collaborative on behalf of NOFA Vermont requested to be included in the Village Downtown Zoning District. NOFA Vermont owns the parcel PS0014. Parcel PS0014 is 0.3 acres and hosts a Business Office use with 14 employees. The primary structure on the parcel is 3,000 square feet. I have included their parcel number in the “Area” section for your consideration.

### 3.10 Village Downtown District (VD)

**Area:** the following parcels are included in this district: PS0023, BR0052, BR0048, BR0039, BR0038, BR0030, BR0027, BR0026, WM0013, EM0010, EM0013, WM0004, WM0035, DS0022, PS0014

**Purpose:** The purpose of the Village Downtown Mixed-Use District is to provide a district that encompasses the existing village core area and supports employment, light industry, commercial enterprises, community gathering spaces, dense and affordable housing, and other compatible uses that bring value to the community and maintain Richmond's unique sense of place. It will also support the traditional village mixed use patterns with street/ground level commercial uses and upper floor residential uses. There are 3 primary goals for this district:

1. Help improve the economic vitality of Richmond by attracting desirable new businesses to the site, creating jobs, and increasing municipal water and wastewater utility use.
2. Attract residents and visitors to our village center for community and commercial activities.
3. Increase the housing density, affordability, and diversity in order to support a vibrant and diverse population of Richmond residents.

Any development in this district shall enhance the overall village area and shall be compatible with the surrounding mix of residential, non-residential, and municipal uses. Any development proposal shall fit into the vision for Richmond as described in the Richmond Town Plan.

#### 3.10.1 Allowable Uses Upon Issuance of Zoning Permit ~~by Administrative Officer~~ and Site

**Plan Approval-** The following uses shall be allowed uses in the Village Downtown District upon issuance of a Zoning Permit by the Administrative Officer. Site Plan Review by the DRB shall also be required. More than one principal use per lot is allowed in this district.

- ~~a) Cooperative Workspace~~
- ~~b) Artists/Crafts studio~~
- ~~c) Bank~~
- ~~d) Bed and Breakfast~~
- ~~e) Hotel~~
- ~~f) Inn or guest house~~
- ~~g) Laundromat~~
- ~~h) Office, Medical~~
- i) Office, ~~Business or~~ Professional
- j) Personal Services
- k) Retail business

**3.10.2 Allowable Uses Upon Issuance of Conditional Use Approval-**The following uses may be allowed in the Village Downtown District after issuance of conditional use approval by the DRB. More than one principal use per lot is allowed in this district.

- ~~a) Agriculture, silviculture, and horticulture as provided in 2.4.5~~
- ~~b) Artists/Crafts studio~~
- ~~c) Bank~~
- ~~d) Bed and Breakfast~~

- e) Brewery
- f) Catering Service
- g) Center-based Child Care Facility
- h) Commercial Multi-Use Building
- i) Educational Facility as provided in Section 5.10.4
- j) Equipment Rental or Supply
- k) Food Processing Establishment
- l) Funeral Parlor
- m) Group Home
- n) Health Care Services
- o) Hospital
- ~~p) Hotel~~
- q) Research Laboratory, ~~Research or other~~
- ~~r) Inn or guest house~~
- ~~s) Laundromat~~
- t) Light Manufacturing
- ~~u) Medical Offices and Facilities~~
- v) Museum
- w) Pharmacy
- x) Planned Unit Development
  - as provided in Section 5.12, if no subdivision of land is proposed (see Section 5.12.1).
  - Residential Dwelling Units as part of a Mixed Use Planned Unit Development
  - No residential-only Planned Unit Development
- y) Pharmacy
- z) Private Club
- ~~aa) Pub~~
- bb) Recreational facility, ~~indoor or outdoor, facility or park~~
- cc) Religious use as provided in Section 5.10.4
- dd) Restaurant
- ~~ee) Retail business~~
- ff) Retirement Community
- ~~gg) Short Term Rental~~
- hh) State- or community-owned and operated institutions and facilities as provided in Section 5.10.4
- ii) Tavern
- jj) Theater
- kk) Wholesale trade
- ll) Veterinary Clinics

### 3.10.3 Residential Density and Requirements

- a) Each residential unit shall require 1/24 acre of developable land located on the same lot as the unit. This equals a residential density of 24 units per acre. The residential density shall be calculated as provided in section 4.12.

Each residential dwelling unit shall require 1/24 acre of developable land located on the same lot as the unit. This equals a residential density of 24 units per acre. Developable land excludes those lands that are outlined in section 2.5.2. The maximum number of units that may be permitted shall be calculated by multiplying the residential density by the total developable acreage of the lot. When this calculation results in a number of units

with a fractional component, the fraction will be rounded according to conventional rounding rules as follows, where X is a whole number:

X.0 – X.49 units shall be rounded DOWN to X units.

X.50 – X.99 units shall be rounded UP to X+1 units.

Examples: 24 units/acre x 0.22 developable acres = 5.28 units rounds DOWN to 5 units.

24 units/acre x 0.16 developable acres = 3.84 units rounds UP to 4 units.

If the number of permissible units is less than one (1) it shall be rounded UP to 1 unit.

Example: 24 units/acre x 0.02 developable acres = 0.48 units rounds UP to 1 unit.

**b)** Residential dwelling units shall be restricted to the second story/floor and above of any building and shall not be allowed on the street/ground level. These units may be approved as part of a mixed-use Planned Unit Development.

**3.10.4 Dimensional Requirement for Lots in the VD District**-No Zoning Permit **may** can be issued for Land Development in the VD District unless the lot proposed for such Land Development meets the following dimensional requirements:

**a) Lot Area**- No lot shall be less than one-eighth (1/8) or 0.125 acre The purchase of additional land by the owner of a lot from an adjacent lot owner will be permitted, provided such purchase does not create a lot of less than the minimum area required in the Zoning District on the part of the seller.

**b) Lot Dimensions**-Each lot must contain a point from which a circle with a radius of twenty-five (25) feet can be inscribed within the boundary of the lot.

**d) Lot Frontage**-No lot having frontage on a public or private road shall have less than seventy-five (75) feet of continuous uninterrupted length of said frontage, or the lot must have access to a public or private road with approval by the DRB pursuant to Sections 4.2 and 4.3.

**e) Lot Coverage**- The total ground area covered by all structures, parking areas, walkways, driveways and areas covered by impervious materials shall not exceed eighty percent (80%) of the total ground area of the lot.

### **3.10.5 Dimensional Limitations for Structures on Lots in the VD District**

**a) Height**-The height of any structure shall not exceed thirty-five(35) feet. Refer to Section 4.12 for additional regulations, exemptions, and restrictions regarding building height. ~~In addition, all units in which people live or work must be provided with an egress window whose lower sill or threshold shall not exceed thirty two (32) feet from the adjacent ground and shall be large enough to allow for passage of an average sized adult human.~~

**b) Setback**- All structures shall have zero (0) feet setbacks, except for a five (5) feet setback for all structures **on** from district boundaries. All development is required to install and maintain a sidewalk to the public works standards on any and all public road frontage. Placement of the sidewalk and curb cuts or accesses to the property are subject to approval of the Highway Foreman.

**3.10.6 Other Requirements Applicable to Lots in the VD District-** No Zoning Permit may be issued for Land Development in the VD District unless the Land Development meets the following requirements:

**a) Water Resources-**all lots in this district shall be served by the Richmond municipal water and sewer system.

**b. Parking**

i) Residential

In this district, the residential parking requirement shall be based on the number of bedrooms per dwelling unit. The spaces required shall only serve to calculate overall supply and shall not be assigned to specific dwellings.

Bedrooms	Efficiency (0)	1 Bedroom	2 Bedroom	3 Bedroom	4 Bedroom
Spaces Required	1	1.5	2	2.5	3

Spaces shall increase by 0.5 spaces per additional bedroom.

Bicycle parking racks shall be required within the parking areas, and lots shall be required to provide safe and convenient bicycle access as per section 6.1.6

ii) Non-residential parking supply requirements shall follow the requirements as set forth in section 6.1.

iii) Exempted Lots

BR0052, BR0048, BR0038, BR0030, BR0026, BR0039, EM0010 are exempt from standard parking requirements. However, they are required to provide a descriptive plan for where they intend to have tenants and patrons park, whether that be providing a copy of a private parking agreement between landowners or use of public parking. Use of public parking requires approval from the Selectboard and the road foreman approval in the form of a public parking permit.

**b) Loading** - Off-Road or Highway loading requirements shall be regulated as provided in Section 6.1.

**c) Signs** - Signs shall be regulated as provided in Section 5.7.

**d) Traffic Impact** - The purpose of this requirement is to foster the general welfare of the public through the minimization of traffic congestion, air pollution, and the risk of motor vehicle and pedestrian accidents.

a) A transportation impact study shall be required for uses which generate more than 70 vehicle trip ends on adjacent roads during the P.M. peak hour for the first 40,000 square feet of land development area or fraction thereof, plus 1 vehicle trip end for each additional 1,000 square feet of land development area. In making the determination of traffic impact, the Administrative Officer or DRB shall utilize "Trip generation – Tenth Edition", Institute of Traffic Engineers (ITE), or its equivalent, or any subsequent and most recent publication thereof, and may use estimates from other sources, including local traffic counts, if the above publication does not contain data for a specific use or if a use contains unique characteristics that cause it to differ from national traffic estimates.

- b) For establishments that generate more than 70 vehicle trip ends during the P.M. peak hour, the Development Review Board shall review the level of service of adjacent roads. Based on its review as well as consultation with the Road Foreman, the DRB may put forth permit conditions to mitigate adverse traffic impacts. Permit conditions may include:
- a. Site improvements to improve access management, such as the creation of secondary access points, the reduction of the width of curb cuts, or the like;
  - b. Improvements to internal circulation, including the creation of narrower roadway widths, pedestrian pathways, and the like;
  - c. Improvements with connections with adjacent properties, such as, but not limited to, the creation of additional vehicle or pedestrian access points, the installation of signage and traffic lights, and adjustments to intersections to reduce pedestrian crossing distances and to slow traffic.

**e) Access** - Access shall be regulated as provided in Sections 4.1 through 4.4.

**f) Compatibility-** The purpose of this requirement is to allow the Development Review Board to review and approve the visual aspects of new construction or new or remodeled exteriors. The goal of this requirement is to ensure public ability to review the visual rendering, and the opportunity to provide input. A visual rendering of any new construction or remodeled exterior shall be required as part of a site plan and/or conditional use application. Any changes to the facade, size, or scale of new construction or a remodeled exterior shall require a new visual rendering that portrays the proposed changes and shall require an amendment to the Development Review Board's original site plan and/or conditional use approval which contains the most recent iteration of the visual rendering. The following shall be considered when reviewing the application:

- Compatibility of size, scale, color, materials, and character of the district, and construction utilizing materials similar or the same to the existing buildings of the district, is required for all new construction and all new or remodeled exterior facades.
- Applicants shall be required to demonstrate compatibility through examples, research, architectural consultation, or other means.
- This compatibility requirement shall not prohibit artistic expression, ability to landscape, commercial viability, creativity, or individuality.

**g) Residential Use** - Residential dwelling units shall be restricted to the second story/floor or higher of any building and shall only be approved and permitted via Planned Unit Development.

**h) Additional Possible Conditions** - The following site standards also may be required as a condition of Development Review Board approval

- Greater setback or screening requirements along the perimeter of the property
- Adequate pedestrian circulation
- Landscaping
- Demonstration of the ability to properly develop, operate, and maintain development roads, utilities, driveways, parking, sidewalks, landscaping, and other conditions or standards imposed

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Insert reference to “VDZD” to Sections 4.11.3c, 5.7.4, and 5.12.2

DRAFT

Veterinary Clinics *[add]* - An establishment intended primarily for the medical and surgical treatment of domestic animals including the short-term boarding of animals while receiving treatment. Allowable accessory uses include pet grooming and the retail sale of pet supplies.

*Add “Veterinary Clinics” uses to the following sections*

- Section 3.1.2 (Allowable Uses Upon Issuance of Conditional Use Approval in the A/R District), with the condition: with a maximum size of 2500 square feet gross floor area
- Section 3.2.2 (Allowable Uses Upon Issuance of Conditional Use Approval in the HDR District), with the condition: with a maximum size of 2500 square feet gross floor area
- Section 3.3.2 (Allowable Uses Upon Issuance of Conditional Use Approval in the R/C District)
- Section 3.4.2 (Allowable Uses Upon Issuance of Conditional Use Approval in the Gateway District)
- Section 3.5.2 (Allowable Uses Upon Issuance of Conditional Use Approval in the V/C District)
- Section 3.6.2 (Allowable Uses Upon Issuance of Conditional Use Approval in the Commercial District)
- Section 3.7.2 (Allowable Uses Upon Issuance of Conditional Use Approval in the I/C District)
- Section 3.9.2 (Allowable Uses Upon Issuance of Conditional Use Approval in the JC District)
- Section 3.10.2 (Allowable Uses Upon Issuance of Conditional Use Approval in the VD District)

TO: Richmond Planning Commission

FROM: Ravi Venkataraman, Town Planner

DATE: February 27, 2020

SUBJECT: Determining Priorities Per District

Part of agenda item 8 is an exercise to map out where the Planning Commission envisions various uses and urban forms throughout the Town.

Below is a list of aspects:

1. More single-family houses
2. More duplexes
3. More townhouses
4. More triplexes, four-plexes, or five-plexes
5. More apartment buildings
6. More professional offices
7. More industrial uses
8. More shops
9. More restaurants
10. More parks
11. More trails
12. More sports fields
13. More farmland conserved
14. More forests conserved
15. More renewable energy structures
16. More walkable neighborhoods
17. Fill in your own (think broadly in terms of uses and urban forms, but concrete)

More information will be provided during the meeting.

## **Checklist – Revising Zoning Districts**

1. Is the purpose the same?
  - a. Has the district changed in nature, character, and built environment?
  - b. How does this district align with the Transect (urban-rural continuum)? Therefore, what kind of urban form should we anticipate?
2. What is the district called now? Do we want to keep the same name?
  - a. Does the name match the intent and purpose of the district?
3. Do we want the same allowable and conditional uses?
  - a. What uses detract from the character of the district?
4. Do we want to add any uses, including ones from our “new uses” list?
  - a. What uses would contribute to the purpose of the district?
5. Are current uses compatible with new definitions?
  - a. Do the definitions match statutory requirements, as well as the nature of the use today?
6. Do we want to keep the same residential/commercial density?
  - a. Density measured in number of units per acre, and minimum lot sizes
7. Are the dimensional requirements and limitations still useful?
  - a. Are the standards for setbacks, lot coverage, building coverage (if included), and building footprint limitations still valid?
8. Do we want to keep the same boundaries? Add more area? Divide into 2 or more districts?
  - a. For certain districts, what is the extent of growth we want to promote?
  - b. Are additional requirements for Conditional Use Review and Site Plan Review needed?
9. Do we need design standards in this district?
  - a. This is a larger question of whether to have form-based elements in a district, or a design review district.
10. How can we advance our Town Plan goals in this district for the following?
  - a. More housing of all types, including affordable housing and accessory dwellings
  - b. Less fossil fuel use and more efficient energy usage (Act 174)
  - c. More economic and employment opportunities, including indoor and outdoor recreational businesses
  - d. Protection and expansion of our iconic industries, including farming and forestry through value-added and accessory uses among other methods, and of traditional outdoor recreational activities
  - e. Concentration of growth in the downtown areas
  - f. Exploration of form- and density-based zoning
  - g. Support for historic resources
  - h. Preservation of forest blocks (Act 171)
  - i. Minimization of developmental impacts on land and water
  - j. Support for community building
  - k. Protection of flood hazard area
11. How will PUDs fit into this district?
  - a. Should there be specific PUD and/or PRD standards in order to advance the goals of the Town Plan?
12. Is this district compatible with changes made by JCZD?
13. Have we reviewed the 2012 zoning effort for any new ideas that could be incorporated?
14. Have we considered information we have received through our outreach efforts?
15. Have we consulted Suzanne and the DRB for any red flags of difficulty for them?