RSG INC.
RESOURCE SYSTEMS GROUP, INC.

WAITSFIELD VILLAGE PARKING AND PEDESTRIAN CIRCULATION STUDY

Waitsfield, Vermont

Prepared for:

Town of Waitsfield;

Mad River Valley Planning District; and

Central Vermont Regional Planning Commission

March 2006

Final Report - Appendices

With assistance from LandWorks

100 Dorset Street, Suite 20 ▪ South Burlington, Vermont 05403

WAITSFIELD VILLAGE PARKING AND PEDESTRIAN CIRCULATION STUDY

Appendices – March 2006

Appendix A: Parking Data

Appendix B: Study Area Land Owners and Mailing Addresses

Appendix C: Public Meeting Notes

Appendix D: VT 100-Bridge Street-Traffic Volumes, LOS Worksheets (Will be provided with Final Report).

Appendix E: Cross-walk Guideline Assessment

Appendix F: Cost Estimates (Will be provided with Final Report)

APPENDIX A

Parking Data

Special Event - Baked Beads Sale and Wedding: October 8, 2004

Location	On/Off Street	Supply	Parked Cars 12:00 PM	Parked Cars 1:30 PM	Notes
Farr Lane Municipal Lot	Off	24	24	26	
Bridge Street North Side	On	8	8	8	
Bridge Street South Side	On	4	5	5	
Private Alley between Cheap Thrills Thrift Shop & Gallery	Off	2			
Bridge Street Marketplace (retail)	Off	70	70	49	Sign "Baked Beads Parking"
Fuller House (office)	Off	30	17	13	
VT 100 East Side (Northbound) (from Church to Clearwater Sports)	On	35	23	26	
VT 100 West Side (Southbound) near Cabin Fever Quilts	On	10	0	11	
Mad River Glass (VT 100 East Side)	Off	6			Did not count
Harriett & King (VT 100 East Side)	Off	6			Did not count
Mad River Valley Ambulance - Front Lot (VT 100 East Side)	Off	4			Did not count
Mad River Valley Ambulance - Rear Lot (VT 100 East Side)	Off	20			Did not count
Clearwater Sports (VT 100 East Side)	Off	3			Did not count
Fire House (VT 100 East Side)	Off	10			Did not count
General Waite House (VT 100 East Side)	Off	12			Did not count
The Old High School (VT 100 East Side)	Off	14			Did not count
Mad River Lodge (VT 100 West Side)	Off	4	3	3	
Behind Village Grocers (VT 100 West Side)	Off	15	15	19	Sign "Baked Beads Parking"
Head-in Parsonage Lane to Village Grocers (VT 100 West Side)	Off	9	7	3	
Front of Village Grocers (VT 100 West Side)	Off	4	2	2	
Parsonage Lane Eastbound (VT 100 West Side)	On	4	8	8	
Kehoe Design & Sign (VT 100 West Side)	Off	3	2	2	
No Wirz Wireless Network (VT 100 West Side)	Off	5	3	2	
Fit Werz (VT 100 West Side)	Off	3	4	2	
Cabin Fever Quilts & Luminosity (VT 100 West Side)	Off	8	9	5	
Behind Waitsfield Church	Off	16	16	16	
		330	216	200	

Typical Weekday: Wednesday October 20, 2004

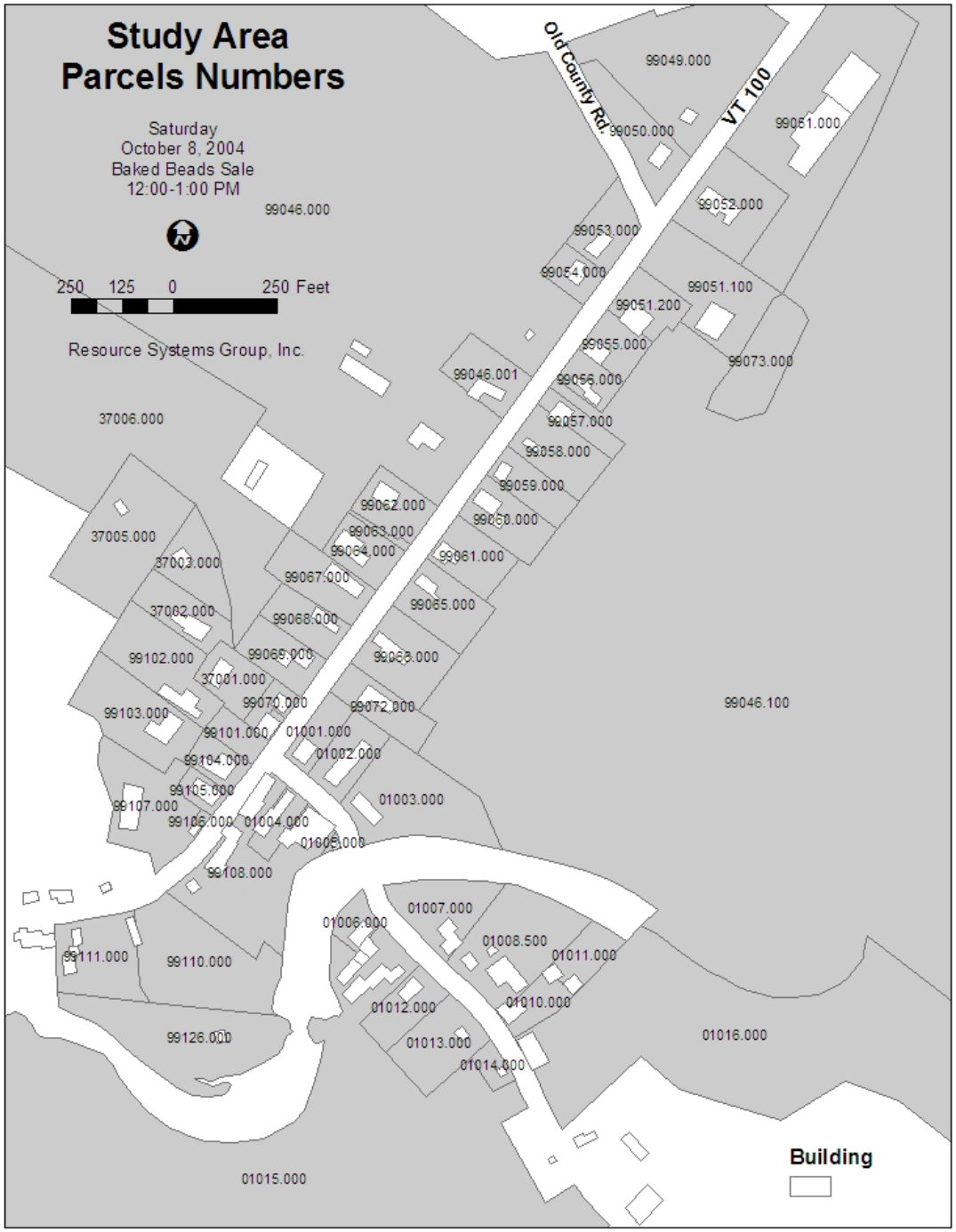
Location	On/Off Street	Supply	Number of Parked Cars					
			7:00 AM	8:30 AM	10:00 AM	1:00 PM	4:00 PM	6:00 PM
Farr Lane Municipal Lot	Off	24	1	2	10	8	12	5
Bridge Street North Side	On	8	0	2	3	1	7	2
Bridge Street South Side	On	4	1	2	1	4	4	0
Private Alley between Cheap Thrills Thrift Shop & Gallery	Off	2	0	0	0	1	1	0
Bridge Street Marketplace (retail)	Off	70	2	9	17	24	18	10
Fuller House (office)	Off	30	0	0	3	3	4	3
VT 100 East Side (from Church to Clearwater Sports)	On	35	5	7	4	4	6	5
VT 100 West Side (Southbound) near Cabin Fever Quilts	On	10	0	0	0	0	0	0
Mad River Glass (VT 100 East Side)	Off	6	1	1	4	4	3	3
Harriett & King (VT 100 East Side)	Off	6	4	5	5	3	1	3
Mad River Valley Ambulance - Front Lot (VT 100 East Side)	Off	4	0	0	0	0	0	0
Mad River Valley Ambulance - Rear Lot (VT 100 East Side)	Off	20	0	0	4	4	6	1
Clearwater Sports (VT 100 East Side)	Off	3	1	2	3	2	3	1
Fire House (VT 100 East Side)	Off	10	0	5	0	2	1	1
General Waite House (VT 100 East Side)	Off	12	0	3	14	4	3	0
The Old High School (VT 100 East Side)	Off	14	8	4	6	2	7	5
Mad River Lodge (VT 100 West Side)	Off	4	3	2	2	3	3	3
Behind Village Grocers (VT 100 West Side)	Off	15	1	3	3	2	1	1
Head-in Parsonage Lane to Village Grocers (VT 100 West Side)	Off	9	1	2	5	0	1	1
Front of Village Grocers (VT 100 West Side)	Off	4	2	2	2	0	1	1
Parsonage Lane Eastbound (VT 100 West Side)	On	4	0	0	0	0	0	0
Kehoe Design & Sign (VT 100 West Side)	Off	3	0	0	0	0	0	0
No Wirz Wireless Network (VT 100 West Side)	Off	5	2	3	4	3	4	2
Fit Werz (VT 100 West Side)	Off	3	2	2	3	2	2	2
Cabin Fever Quilts & Luminosity (VT 100 West Side)	Off	8	2	3	4	5	4	5
Behind Waitsfield Church	Off	16						
		330	36	59	97	81	92	54

Special Event - Concert at Valley Players Theatre October 24, 2004

Location	On/Off Street	Supply	Parked Cars 5:00 PM
Farr Lane Municipal Lot	Off	24	5
Bridge Street North Side	On	8	0
Bridge Street South Side	On	4	0
Private Alley between Cheap Thrills Thrift Shop & Gallery	Off	2	1
Bridge Street Marketplace (retail)	Off	70	4
Fuller House (office)	Off	30	0
VT 100 East Side (from Church to Clearwater Sports)	On	35	35
VT 100 West Side (Southbound) near Cabin Fever Quilts	On	10	9
Mad River Glass (VT 100 East Side)	Off	6	2
Harriett & King (VT 100 East Side)	Off	6	2
Mad River Valley Ambulance - Front Lot (VT 100 East Side)	Off	4	0
Mad River Valley Ambulance - Rear Lot (VT 100 East Side)	Off	20	2
Clearwater Sports (VT 100 East Side)	Off	3	2
Fire House (VT 100 East Side)	Off	10	0
General Waite House (VT 100 East Side)	Off	12	0
The Old High School (VT 100 East Side)	Off	14	6
Mad River Lodge (VT 100 West Side)	Off	4	3
Behind Village Grocers (VT 100 West Side)	Off	15	0
Head-in Parsonage Lane to Village Grocers (VT 100 West Side)	Off	9	2
Front of Village Grocers (VT 100 West Side)	Off	4	2
Parsonage Lane Eastbound (VT 100 West Side)	On	4	1
Kehoe Design & Sign (VT 100 West Side)	Off	3	0
No Wirz Wireless Network (VT 100 West Side)	Off	5	1
Fit Werz (VT 100 West Side)	Off	3	2
Cabin Fever Quilts & Luminosity (VT 100 West Side)	Off	8	7
Apartment Building 4199 (VT 100 West Side)	Off	16	10
Valley Players Theatre		4	4

APPENDIX B

Study Area Land Owners


Study Area
Parcels Numbers
Saturday
October 8, 2004
Baked Beads Sale
12:00-1:00 PM
250 125 0 250 Feet
Resource Systems Group, Inc.
Old County Rd
VT 100
99049.000
99050.000
99051.000
99052.000
99053.000
99054.000
99051.100
99051.200
99055.000
99073.000
99046.000
99046.001
99056.000
99057.000
99058.000
99059.000
99060.000
99061.000
99062.000
99063.000
99064.000
99065.000
99066.000
99067.000
99068.000
99069.000
99070.000
99071.000
99072.000
99046.100
37006.000
37005.000
37003.000
37002.000
37001.000
99102.000
99103.000
99101.000
01001.000
01002.000
99104.000
99105.000
99107.000
99106.000
01004.000
01005.000
01003.000
99108.000
01006.000
01007.000
01008.500
01011.000
01010.000
99111.000
99110.000
01012.000
01013.000
01014.000
99126.000
01016.000
01015.000
Building

Parcel Number	Owner Name	Parcel Address	Owner Address (If Different from Parcel Address)
99046.000	Flemer Leslie	0 Main St	PO Box 509, Waitsfield
99046.100	Flemer Leslie	0 Main St	PO Box 509, Waitsfield
99051.000	Waitsfield School	3951 Main St	
99049.000	Valley Gardner Ctr	4036 Main St	
37006.000	Mehuron Bruce	155 Mehuron Dr.	
99050.000	Mad River Health Center	859 Old County Road	
99052.000	Waitsfield Town Of	0 Main St	
99053.000	Buchannan Ian S.	4102 Main	4318 Main St, Waitsfield
99051.100	Waitsfield Fire Department	4103 Main St	
99054.000	Hornbeck nancy	4124 Main	
99051.200	Schoolhouse Condominium	4125 Main St	
99073.000	Waitsfield Cemetery	0 Main St	
99055.000	Gardner Frances	4147 Main St	PO Box 1583, Waitsfield
99046.001	Tavern Owners Assoc	4200 Main St	
99056.000	Bonnette Roberta	4167 Main St	
99057.000	Mad River Vally Ambulance	4177 Main St	
99058.000	Seibert Kirsten & Lawton	4199 Main St	
99059.000	King Richard Johnston	4219 Main St	PO Box 879, Waitsfield
37005.000	Mehuron Irene Family Trust	115 Mehuron Dr	PO Box 59, Waitsfield
99062.000	Odd Players Condominium	4254 Main St	PO Box 441, Waitsfield
99060.000	Leppla David K	4235 Main St	
37003.000	Larrow Everett	47 Mehuron Dr	
99063.000	Waitsfield Town Of	0 Main St	
99064.000	Speroni Aldo E	4276 Main St	992 St George Rd Williston VT 05495
99061.000	Borel Henri & Rosie	4261 Main St	PO Box 205 Waitsfield
99067.000	Buchanan Ian	4312 Main St	
99065.000	Compere Wrenn	4277 Main St	PO Box 123, Waitsfield
37002.000	Waitsfield United Church Of	55 Parsonage Ln	
99068.000	Kehoe Deborah	4324 Main St	
99102.000	Miller Cathleen	34 Farr Ln.	PO Box 274, Waitsfield
99066.000	Burley Robert Trustee	4317 Main St	
99069.000	VG General Store	4348 Main St	
37001.000	Dion David M.	45 Parsonage Lane	PO Box 602, Waitsfield
99103.000	Uris Alan	46 Farr Ln.	13-29 Michael Pl Bayside NY 11361
99072.000	Waitsfield United Church Of	4355 Main St	
99070.000	Mansfield Elizabeth and John	4366 Main St	PO Box 3, Waitsfield
01001.000	Waistfield Joslin Library	4391 Main St.	
99101.000	Waitsfield Town Of	0 Main St	
99071.000	Masonic Hall Mad River	4376 Main St	Donald Kenney 175 West St Bolton VT 05676
01002.000	Mctigue Bonnie	45 Bridge St.	PO Box 43, Waitsfield
99104.000	M B Z	4402 Main St.	PO Box 323, Waitsfield
99107.000	Waitsfield Fayston Telephone Co.	54 Farr Ln	PO Box 9, Waitsfield
01003.000	Mctigue Bonnie	45 Bridge St.	PO Box 43, Waitsfield
99105.000	Deheer Martin	4412 Main St.	
99108.000	Historic Waitsfield Village Assoc	0 Main St and Bridge St	
01004.000	Four D and K Compansy	20 Bridge St.	PO Box 1486, Waitsfield
99106.000	Deheer Martin	4412 Main St.	
01005.000	Foster Robert	50 Bridge St	PO Box 426, Waitsfield
01007.000	Woodruff Mynderse R	82 Bridge St	PO Box 1, Waitsfield
01008.500	Haskin Dana and Eleanor	125 Bridge St	PO Box 9, Waitsfield
01006.000	Woodruff Mynderse R	82 Bridge St	PO Box 1, Waitsfield
99110.000	Sysko Rochard	4477 Main St	619 North Rd, Waitsfield
99111.000	Maclay William	4509 Main St	PO Box 335, Waitsfield
01011.000	Bennett Arthur	147 Bridge St	
01015.000	Smith John A	108 Bridge St	PO Box 568, Waitsfield
01016.000	Miramar Ski Club Inc	167 Bridge St	Yvonne Caeacci 300 East 40th St Apt 18T NY NY 1002
01012.000	Brodeur John & JR Trust	130 Bridge St	
01010.000	Robillard Luc A	151 Bridge St	
99126.000	Unkown	0 Mad River	
01013.000	Woods Claudia	150 Bridge St	
01014.000	Bridgewater John C	178 Bridge St	PO Box 68, Waitsfield

APPENDIX C

Public Meeting Notes

October 26, 2005

Joe Segale
Resource Systems Group, Inc.
100 Dorset Street, Suite 20
South Burlington VT 05403

Steve Gladczuk, Transportation Planner
Central Vermont Regional Planning Commission
29 Main Street, Suite 4
Montpelier VT 05673

Devon Pierce, Executive Director
Mad River Valley Planning District
PO Box 476
Waitsfield VT 05673

Dear Joe, Steve and Dee:

I am writing on behalf of the Waitsfield Selectboard concerning the final report for the Waitsfield Village Parking and Pedestrian Circulation Study. The Selectboard has reviewed and discussed the study report and public comments, at its meeting on October 24th, and would like to make the following recommendations for the final report on behalf of the Town. The item numbers refer to the numbering used in Joe's memo of September 30th following the last public meeting on the project.

1. The Selectboard agrees that the report should be referred to as a "study" and not a "plan."

2. Proposal for new local street to run from Farr Lane to Valley Players Theatre – The Selectboard concurs with Joe's suggestions to a) leave the concept of such a road in the report for informational purposes; b) to acknowledge the total lack of support from the public for this concept; and c) to clearly state that it is the intention of the Town that this new local street option will not be pursued further.

3. * first bullet item – Selectboard <u>does not</u> support the addition of a sidewalk on the south side of Parsonage Lane along the side of the Larrow House building owned by Jim Donkersloot. Please do not add this to the study. The Selectboard is pursuing other options for demarcating the public traveled way on Parsonage Lane, and to clearly indicate parallel parking along the side of this building.

* second bullet item – The study should simply acknowledge that the sidewalk and on-street parking treatments on the east side of Route 100 from the Seibert/Lawton residence and northerly to the Elementary School will be determined as part of the Route 100 Transportation Path Project. The Selectboard has yet to make a final decision in this regard in response to requests to make a modification to the current conceptual plan submittal indicating no parking in this area. The study should therefore reflect the current plan and defer to the TransPath project regarding any further modifications to that plan.

* third bullet item – Selectboard concurs that the sidewalk shown on the west side of Route 100 south of Farr Lane should be removed in keeping with property owner and public comments.

4. The Selectboard concurs with Joe's recommendation to delete the access road from Bridge Street to a future parking lot behind the Waitsfield UCC Church.

5. The Selectboard concurs with Joe's recommendation to reduce the width and move the location of a proposed crosswalk near the Valley Players Theatre to the south.

6. The Selectboard concurs with Joe's recommendation to include the objections of the Valley Players Theatre to the relocation of the Civil War Monument in front of the theatre.

7. The Selectboard believes that the suggestion made under this item for Village residents and businesses to form a Village/Neighborhood organization, while having merit, does not belong in the study report. This was a comment made by a Selectboard member at the meeting. The Selectboard believes this may be a worthy concept, but that doing so should be up to the residents/business owners, and should not be a suggestion made in a parking and pedestrian circulation study.

Thank you for your attention to these changes. The Selectboard looks forward to receipt of the final report.

Sincerely,

William Bryant
Town Administrator

c:Village Circulation Study SB Comments 10-05

CC Waitsfield Planning Commission

RSG INC.
RESOURCE SYSTEMS GROUP, INC.

MEMO

To: Devon Pierce, Mad River Planning District and Steve Gladczuk, Central Vermont Regional Planning Commission
From: Joe Segale, P.E.
Subject: Summary of September 28, 2005 Public Meeting
Date: 30 September 2005

Meeting notes from the September 28, 2005 public meeting are attached for your review. The meeting was well attended by over 30 people including residents and business owners from the study area, and town and regional planning officials. This memorandum summarizes the major points made by the public and recommends the revisions that will be incorporated in the Final Report subject to the steering committee's approval.

1. The report should be referred to as a "study" rather than a "plan". This change will remove the appearance that the document has any type of statutory or regulatory significance. The study is a resource for the Town. It does not constitute a commitment or obligation to implement any of the recommendations.
2. There was strong opposition to the new local street proposed between Farr Lane and the Valley Players Theatre. No one supported the concept. The plans and discussion of the new local street will remain in the report for informational purposes and to document that the alternative was considered but rejected by the public for the reasons listed in the attached meeting summary. The study will recommend that the new local street not be pursued further by the Town.
3. There was general support for the sidewalks, cross-walks, and driveway modification proposed for the west side of VT 100 north of Farr Lane to Old County Road (generally referred to as the "short-term recommendations). The following revisions will be incorporated into the short-term recommendations:
   - A sidewalk along the south side of Parsonage Lane to provide access to the residents located behind the Village grocery will be added;
   - On-street parking will be indicated on the east side of VT 100 further north and beyond the Mad River Valley Ambulance.
   - The sidewalk shown on the west side of VT 100 south of Farr Lane will be removed.
4. Remove the access road from Bridge Street to a future parking lot behind the Waitsfield Church.

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TEL 802.383.0118 ▪ FAX 802.383.0122 ▪ www.rsginc.com

5. Representatives from the Valley Players Theatre asked that the large cross-walk proposed in front of the theatre be reduced in width and that it be moved (north?). The appropriate graphics will be changed.
6. Representatives from the Valley Players Theatre stated their objections to relocating the monument in front of the theatre. They do support the concept of a public space/public park in that location. Language will be added to note their objection to the monument but support of the public space.
7. The executive summary will be revised accordingly. It will include a recommendation that the Village residents and business owners should form a Village/Neighborhood organization that meets on a regular basis. This group would work together to identify issues and develop solutions. The study is a resource that provides a starting point for the group.

A one month deadline was established to allow people time to submit comments in writing. I will make the changes listed above plus additional revisions that may be raised in any written comments, subject to the steering committee's approval.

Please provide comments from the steering committee and public by October 28, 2005.

RSG INC.
RESOURCE SYSTEMS GROUP, INC.

WAITSFIELD VILLAGE PARKING AND PEDESTRIAN CIRCULATION STUDY

Public Meeting Notes

September 28, 2005
Waitsfield School, Waitsfield, Vermont

In attendance:

David Frank, Wrenn Compere, Theodore Tremper, BM Parker, Lisa Russell, Jennifer Howard, Ann Uris, Dave Leppla, Carol Hosford, Chris Mall, Brenda Mack, Also Speroni, Mary Schrandle, Jack Smith, Jane Goodwin, Beverly Kehoe, Frank Gardner, Barry ???, Bonin M???, ??? McTrye (???) Martin ???, Ian Buchanan, Sara Sherett, Debbi Kehoe-Larsen, Joanie Moran, Leslie Rose, Sal Spinosa-Selectboard

Steering Committee Members Present: Kirsten Seibert, Bill Bryant-Town of Waitsfield, Steve Gladczuk-CVRPC, Devon Pierce-Made River Planning District, Kevin Russell-VT 100 Transportation Path Manager

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The meeting was held in the Waitsfield Elementary School and began at approximately 7:15 p.m.

Steve Gladczuk opened the meeting. Joe Segale summarize the purpose and scope of work for the project, the issues identified in previous phases of the study, and then reviewed the recommendations contained in the draft plan. Members of the public asked questions and offered comments throughout and following the presentation.

The following comments and questions were raised:

- Many of the meeting participants expressed frustration with a lack of notification for this meeting. Some residents received direct mailings, and others did not. There was an article in the Valley Reporter that discussed the plan. However, the meeting time and location were left out.
- Why was the west sidewalk extended south of Farr Lane to Tree Forms? That area was not identified as part of the study area? The three buildings on VT 100 south of Farr Lane have one owner. The shoulder area in front of these buildings provides parking and loading areas that are important to the businesses located there. A sidewalk and green strip would eliminate this area. A request was made to remove that section of sidewalk from the study.
- There was general support for the sidewalk on the west side of VT 100 north of Farr Lane.
- The vision for the Town is to integrate cars, bicycles, and pedestrians safely. The study is a step in that direction.
- A sidewalk should be provided on the south side of Parsonage Lane to provide for safe access for the residents located behind the Village Grocery. David Frank stated that he realized this sidewalk would mean loss of some of the parking spaces that serve the Village Grocery.

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TEL 802.383.0118 ▪ FAX 802.383.0122 ▪ www.rsginc.com

- Kirtsen Seabert asked that on-street parking be included along the east side of VT 100 in front of her house. She also questioned the goal of removing curb-cuts in a Village area because they help slow traffic. She was supportive of better organization and design of existing curb cuts.
- There was strong opposition stated regarding the new local street proposed between the Valley Players Theater and Farr Lane. Numerous people stated their objections which included:
    - Why add more pavement when the Town is forcing VG to add green space in front of its porch;
    - The land owners along the alignment were not consulted about the road;
    - The new local street would increase development in the Village;
    - Not opposed to expanding a street network around the Village, but the alignment shown in the plan is too close to VT 100. If new roads are added, they should be further from VT 100, should not crowd existing buildings, and should allow enough room to add new homes with reasonable size yards.
    - The local street is simply a long parking lot;
    - Should have looked at alternate roadway locations that do not affect houses. Maybe another crossing of the Mad River
    - The new local street would result in a loss of privacy; and
    - The local street would bring truck traffic and other traffic closer to the homes behind the Village Grocery.

  There was consensus that this recommendation should be removed from the plan. Joe Segale suggested that the new local street should still be shown in the plan, that the objections be noted, and that the document be revised to say that the local street is not recommended. It should stay in the report to document that it was considered, but nor recommended.
- Consider providing a separated bike path along the alignment shown for the new local street.
- There was a concern that increased traffic volumes will cause increased wear and tear on the Covered Bridge. The Town should consider developing alternative routes across the Mad River to reduce the amount of traffic over the Covered Bridge.
- There was general support for the bulbouts at the VT 100-Bridge Street intersection. However, some were concerned that the bulbout on the north-east corner would make it difficult to turn right from Bridge Street to VT 100. By slowing traffic, the bulbouts could create longer queues. Joe Segale stated that the bulbouts would slow traffic, which is the point. The advantage is that they make the intersection safer for pedestrians. A member of the public suggested that the Town test the bulbouts using some temporary barriers or paint before they decide for sure on whether or not to install bump outs at the VT 100-Bridge Street intersection.

- Remove the access road from Bridge Street to a future parking lot behind the Waitsfield Church. The access road is not necessary and would be a significant impact to the existing homes between which it would pass.
- Representatives from the Valley Players Theatre asked that the large cross-walk proposed in front of the theatre be reduced in width and that it be moved (north?). This will preserve parking spaces in front of the Theatre. They do not want the monument moved in front of the Theatre. They do support the concept of an enhanced public space or pocket park in front of the Theatre, but were not supportive of the design concept presented.
- The recommendations should be presented in a two or three page summary that also reports on the public's opinion.
- There needs to be better coordination between the Town planning commission, selectboard, and the steering committee for this project.
- Sal Spinosa pointed out that the study presents many recommendations that people like and do not like. One of its most important benefits is that it has brought people from the Village together to talk about what they want and don't want. The Village residents and business owners should continue the dialogue and should think about forming a Village committee that meets on a regular basis. The study is a resource that provides a starting point for the discussions. The study presents recommendations that in many ways are a response to anticipated growth in the Town. There are other options to managing growth that go beyond the transportation recommendations included in the study.
- The Baked Beads event has moved to Irasville. Therefore, the parking problem caused by that special event is no longer an issue.
- Has there been any discussion with land owners about the conversion of private to public parking spaces. How would the public spaces be reserved for private use?
- The Town should take over ownership of VT 100 through the Village so it has more control in setting speed limits.
- The cross-walk at the community health center makes sense and should be implemented as soon as possible.

Joe Segale stated that additional comments may be submitted in writing for one month.

The meeting ended at 9:15 pm.

PUBLIC MEETING

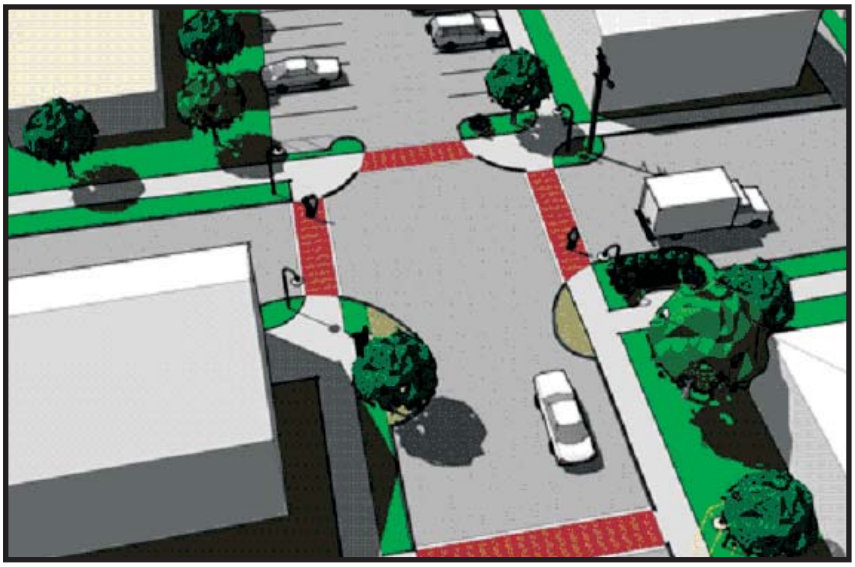
Pedestrian and Parking Plan for Waitsfield Village

What: You are invited to attend a public meeting to view and comment on parking, sidewalk, access management, intersection, and traffic calming recommendations and designs recommended for Waitsfield Village.

The purpose of this public meeting is to collect your comments on ideas such as: narrowing the VT 100-Bridge Street intersection; a sidewalk, green strip, and parking along the west side of VT 100, a new local street between the Valley Players Theatre and Farr Lane; and reconfiguration of the Bridge Street Marketplace parking lot.

When: Wednesday, Sept. 28, 2005
7:00 p.m.

Where: Waitsfield School
3951 Main Street
Waitsfield, VT 05673



Conceptual Rendering of Reconfigured VT 100-Bridge Street Intersection

On-Street Parking & Pedestrian Activity on Bridge Street

VT 100 - Bridge Street Intersection

For More Information:

Copies of the Draft Report can be reviewed at the Waitsfield Town Office and the Mad River Planning District office.

Electronic copies can be downloaded at http://www.centralvtplanning.org/trans.html

RESOURCE SYSTEMS GROUP INCORPORATED

WAITSFIELD VILLAGE PARKING AND PEDESTRIAN CIRCULATION STUDY

Public Meeting Notes

February 3, 2005

Waitsfield School, Waitsfield, Vermont

In attendance:

Richard Hiscore – *Planning Commission*, Hallie Tamez, Kevin Russell, Myndy Woodruff, Joni Zweia - *UMS*, Bev Kehoe – *Kehoe Design*, Irene Mehuran, Jack Smith, Sarah Shorett – *Fit Werx*, Richard Schattman – *Waitsfield Elementary School*, Bill Bryant – *Town Administrator*, Tony Egan, Bill Heinzerling, Brad Cook – *MRVAS*, Craig Goss, Roy Hadden – *Selectman*, Devon Pierce – *MRVPD,* Joe Segale and David Saladino - *Resource Systems Group*.

The meeting was held in the Waitsfield School and began at 7:00 p.m.

Devon Pierce opened the meeting with an overview of the evening's schedule and a summary of the parking and pedestrian circulation study's origins. Joe Segale provided an overview of Resource Systems Group and then described how this project fits into the general transportation planning process. Mr. Segale then continued with a technical presentation which provided an overview of *Project Memorandum #1 – Existing Conditions*. Following Mr. Segale's technical presentation, Kevin Russell provided an overview and update of the Route 100 Transportation Path. The project is undergoing final design which should be ready for review by the Waitsfield Selectboard soon. Following the Selectboard's review the plans will be sent to VTrans for their review.

The following comments and questions were raised following the technical presentations:

- Since only one direction can pass through the Bridge Street covered bridge at a time, eastbound traffic sometimes backs up from the bridge to the VT 100 intersection. To correct this problem, either make westbound traffic yield to eastbound traffic, or permit two-way traffic through the bridge.
- Make the Waitsfield Common Road-East Warren Road more user-friendly.
- The are existing traffic circulation and parking issues at the Waitsfield School. The School is currently looking at re-designing their parking lots.
- There are currently no warning lights or school zone signs in front of the school to slow traffic down. The school and school zone can serve as a gateway into the village to slow traffic entering from the north.

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- The larger issue is the growth in Irasville. Glad to hear that the Route 100 Path will provide a connection there.
- Based on the technical presentation, traffic congestion and parking don't seem to be an issue.
- Would like to see more focus on traffic flow on VT 100 through the village.
    - Joe Segale noted that RSG will be analyzing the impacts of a traffic signal and an all-way stop at the VT 100-Bridge Street intersection. Either of these options will generate some level of congestion and stopped vehicles on VT 100 through the village.
- How will the projects currently in the permitting process be affected?
    - Joe Segale noted that this project would not affect any land use permits currently filed.
    - One of the goals of this study will be to help the Town to understand its parking needs and access management issues.
- Not convinced that Waitsfield needs a sidewalk along the west side between the Masonic Lodge and the Theater. There are more pressing needs in Irasville.
- Don't forget that there is bicycle and pedestrian activity after 5 PM. Any design recommendations should be human scale.
- Many cars do not allow bicycles or pedestrians to cross Bridge Street mid-block. A lot of people J-walk in the village.
- Is the 1.6% traffic growth rate accurate. Was there really much less traffic 10 years ago?
    - Joe Segale noted that the 1.6% growth rate is a statewide average rate for rural arterial roads. The study then added traffic from a build-out analysis of Irasville and Waistfield Village and traffic from a project at Sugarbush. As a result, the traffic volumes used for the future year are conservative on the high side.
- If traffic gets really bad at the Bridge Street-VT 100 intersection, people may just use other routes.
- The crosswalk across VT 100 is not well maintained. When the paint fades, it is not clearly visible to drivers or pedestrians. The Town should encourage VTrans to re-paint the crosswalks more often.
- When cars park at the edge of the Farr Municipal Lot it limits the sight distance for vehicles leaving the lot. The parking spaces should be striped to keep cars away from the edge.
- Good idea to somehow mark sidewalk crossing in front of ambulance driveway.
- The Farr Municipal Lot needs curbs to add definition.
- Parsonage Lane needs to be better defined with curbing.

- How does through traffic demand fit into this plan? Should a bypass be considered to route the through traffic around the village?
- Logging trucks travel too fast through the village.
- How can traffic be slowed without using a traffic light and where should they be slowed down?
    - Joe Segale stated that visual cues can be provided to slow vehicles – such as pedestrian scale lighting, curbs, bump-outs, bike lanes, and speed tables. The school may provide a logical place for the village gateway. 25 mph is a good speed for traffic through the village but needs to be encouraged with proper roadway design.
- Building permits can be tracked as a way to determine traffic growth.
- It is very difficult to get VTrans to repaint their crosswalks. Waitsfield has considered taking over VT 100 but will likely not in the short term.
- How will on-street parking and bicycle lanes work together through the village?
- Bike lanes create a wider paved cross-section which could lead to higher speeds.
- The sidewalk, transportation path, and tree plans are all contingent on the completion of the water and sewer project.
    - The projects may need to move forward separately.
- How can sight distance be improved at the Bridge Street intersection?
    - Joe Segale stated that bulb-outs could be added to allow vehicles to pull out farther from Bridge Street. Additional signs in advance of the intersection on VT 100 should be added.
- What type of pedestrian amenities should be considered in the village?
    - Joe Segale stated that benches and seating area could be located at strategic spots along the corridor such as in front of the theater.
- The re-design of the health center could be paired with the school to serve as a more complete gateway.

Joe Segale summarized the project's next steps:

- March – Present recommendations and implementation plan to Steering Committee;
- April – Hold second public meeting;
- May – Develop Draft Plan; and

- June – Hold final public meeting.

The meeting ended at 9:00 pm.

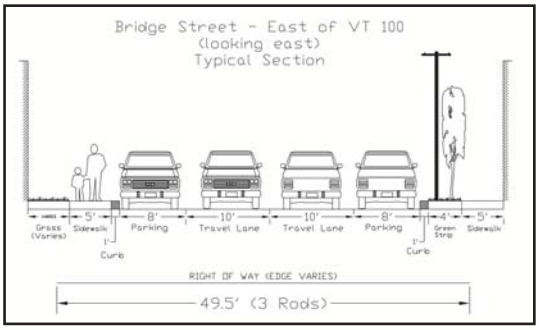
PUBLIC MEETING

Pedestrian and Parking Plan for Waitsfield Village

What: You are invited to attend an upcoming public meeting to discuss the preliminary findings of a pedestrian and parking plan under development for Waitsfield Village. The purpose of the project is to evaluate the feasibility of specific parking, sidewalk, access management, intersection, and traffic calming improvements in Waitsfield Village. The purpose of this first public meeting is to collect early input on issues identified in the report and to discuss potential solutions.

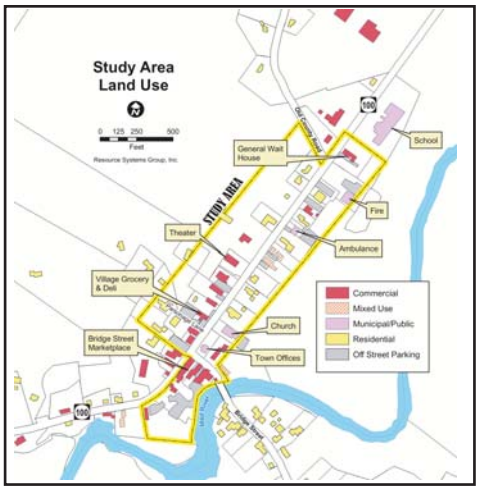
When: Thursday, February 3, 2005
7:00 p.m.

Where: Waitsfield School
3951 Main Street
Waitsfield, VT 05673



Bridge Street - Typical Cross-Section

On-Street Parking & Pedestrian Activity on Bridge Street



Study Area Land Use

For More Information Contact:

Devon Pierce, Mad River Planning District, 802-496-7173, mrvpd@madriver.com

Download the Draft Report: http://www.centralvtplanning.com/Publications.html

RESOURCE SYSTEMS GROUP INCORPORATED

WAITSFIELD STEERING COMMITTEE MEETING

Meeting Notes
27 April 2005
Mad River Planning District Office
Waitsfield, Vermont

In attendance:

Steve Gladczuk-Central Vermont Regional Planning Commission (CVRPC); Aimee Neveau-Vermont Agency of Transportation (VTrans); Dee Pierce-Mad River Valley Planning District (MRVD); Bill Bryant-Town of Waitsfield; Kirsten Seibert-Waitsfield Resident; Craig Goss-Bridge Street Marketplace; Russ Bennett-Waitsfield Planning Commission; Kevin Russell-Route 100 Transportation Path; and Joe Segale and Jon Slason-Resource Systems Group.

MEETING NOTES

1. The meeting was held in the General Wait House Conference Room and began at 9:00 a.m.
2. Summary of February 3, 2005 Public Meeting

Joe Segale summarized the major themes that emerged from the February 3, 2005 public meeting. Joe pointed out that there was general support for sidewalks on both sides on VT 100. One member of the public suggested that sidewalks in Irasville should be a priority over a west sidewalk in the Village.

3. Review of Design Concepts

RSG reviewed design concepts for the VT 100-Bridge Street intersection, VT 100 cross-section, and parking lots behind the Bridge Street Marketplace, Village Grocery, and Church. Following is a list of specific comments and issues discussed related to each location:

VT 100-Bridge Street Marketplace Intersection

- Should an official right-turn lane be added to the Bridge Street approach? Some committee members felt that this change would be a good short-term solution to addressing existing congestion on Bridge Street. If bulbouts are desired, the lane would have to be removed. This lane would result in the loss of one or two parking spaces.
- Steve Gladczuk asked if a traffic signal warrant analysis had been completed. Joe Segale stated no because of a lack of sufficient data on Bridge Street (traffic count data for twelve hours is necessary).
- RSG's bulbout design would result in 14 feet between the roadway centerline and curb on V 100. The cross-section currently assumed for the VT 100 Transportation Path project

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requires fifteen feet (11 foot travel lane plus 4 foot bike lane). Maintaining the 15 foot width would eliminate the possibility of a bulbout on the southeast corner (adjacent to the Marketplace porch where it is needed most). The committee discussed the possibility of requesting a design exception from VTrans to reduce the travel lane from 11 feet to 10 feet.

- The Bridge Street cross-walk is shown in RSG's plans back from VT 100. This location was selected to be consistent with a new alignment of the VT 100 Transportation Path behind the Bridge Street Marketplace. Kevin Russell reported that the revised plans should be available by the end of May.

VT 100 Cross-section

- RSG presented cross-section options that varied based on whether or not: an on-road bicycle facility is provided and its type; the east sidewalk could be pushed as far to the east as possible within the existing right-of-way; the roadway centerline is moved; and a green strip is provided.
- Kevin Russell presented the latest roadway cross-section concept for the VT 100 Transportation Path Project. It consists of 11 foot travel lanes, 4 ft shared shoulder/bike lane, and 7 ft for on-street parking. A white line separates the shared shoulder/bike lane from the travel lane. Parking spaces are striped as well. The shared shoulder/bike lane with 7 ft on-street parking is unique in Vermont and may require a design waiver. This cross-section will allow the reconstruction of the east sidewalk to remain on its existing alignment and does not require relocation of the road centerline.
- Most members of the committee agreed that RSG should use the latest VT 100 Transportation Path cross-section in the concept designs. This direction means that RSG will assume (1) the roadway centerline will not move and (2) the east sidewalk will remain on its current alignment.
- Curbs should be included on the west side of VT 100 as part of the west sidewalk concept all the way to Old County Road. Curbs require an enclosed drainage system. The CADD plans available to RSG did show any catch basins on the west side. However, members of the committee believe that catch basins do exist.
- Additional on-street parking should be provided on the west-side of VT 100 just north of the proposed cross-walk to Valley Players Theatre.

Traffic Calming and Gateway Concepts

- RSG's concept plan include some wide textured cross-walks with bulbouts at the north and south end of the Village. A plan for a park and gateway around the VT 100-Old County Road intersection was prepared for the Village by Kirsten Seibert and Ellen Strauss a while ago. Kirsten will provide RSG a copy of the plan.

- Consider adding bulbouts with trees at additional locations along VT 100.

Village Grid Network

- The committee members support the concept of adding new local streets to the Village. The most common suggestion was to change curvilinear alignments to a network that would create a traditional grid where many the streets are parallel to VT 100 and Bridge Street and meet at 90 degree angles where possible.
- The street proposed west of VT 100 between Valley Players Theatre and Farr Lane should allow two-way traffic its entire length. Show a connection to a future road north through the polo grounds.
- Consider maintaining the current alignment of Parsonage Lane which will provide a connection between VT 100 and the new street.
- Show a short-term local street between Kehoe Design and No Wirz.
- Relocate the Bridge Street entrance to the Church Lot shown in the RSG concept plan further east.
- Change the alignment shown for the street shown passing through the Bridge Street Marketplace. Show a dotted line indicating that it could continue south of Fuller House in the future.

Bridge Street Marketplace Parking Lot

- Eliminate the parking spaces shown near the River. Maintain that area as green space with some type of foot path. That area is often used by the general public.
- Reconfigure the design to include clusters of parking spaces with green space.
- Consider incorporating the Fuller House lot
- Include on-street parking along the new local street that will provide a connection between Bridge Street and VT 100. The new local street should be designed in manner to slow-down traffic. It should have the feel of a "lane".

Village Grocery Lot

- The main comment was related to the concept that includes the new local road. The RSG concept plan realigns Parsonage Lane so that it would not be an attractive through street. Some committee members felt that Parsonage Lane should be maintained on its current alignment.

Church Parking

- There was general agreement that the Church lot is not necessary until the long-term. It should still be shown in conjunction with a new Village street between Bridge Street and VT 100 to the north. Indicate possible expansion beyond current Church parcel boundary.

General Comments

- Joe Segale presented cost estimates for the various design concepts. The committee felt that the cost estimates should include a comfortable safety factor to account for the use of high quality materials.
- The committee would like a general statement in the final plan that supports placing utilities underground. Kevin Russell stated that the estimated cost to burry the utilities associated with the VT 100 Transportation Path ranged between $1.6 to 3.6 million.

4. Next Steps

- RSG will revise the concepts based on steering committee members' comments. David Raphael from LandWorks will add his design input and will prepare renderings for use at the public meeting.
- The public meeting will be scheduled for early June – before school ends.

Prepared by Joe Segale.

RESOURCE SYSTEMS GROUP INCORPORATED

WAITSFIELD VILLAGE STUDY

Kick-off Meeting Notes
October 10, 2004
Mad River Planning District Office
Waitsfield, Vermont

In attendance:

Bill Bryant, *Town of Waitsfield;* John Reilly, *Waitsfield Planning Commission*
Steve Gladczuk, *CVRPC;* Devon Pierce, *MRVPD;* Kevin Russell, *Waitsfield Municipal Project Manager*
Mark Bannon, *Bannon Engineering;* John Kiernan, *Phelps Engineering;* Joe Segale and David Saladino, *Resource Systems Group.*

The meeting was held in the General Wait House Conference Room and began at 2:00 p.m.

Following attendee introductions, Joe Segale provided a brief overview of the RSG project study area and scope of work.

The following comments and questions were raised during the course of the meeting:

- Bannon Engineering is currently working on the final designs for improving the sidewalk along the east side of the village and a bike lane on both sides of the road through the study area. The bike lane will run along VT 100 from VT 17 north 1.3 miles. The proposed cross-section north of Bridge Street includes an 11 foot lane, 10 foot shared shoulder (bike & parking), and a five foot sidewalk;
- Cars occasionally park along the western side of VT 100 at various locations in the village;
- North of Bridge Street along VT 100 and along Bridge Street, the Town of Waitsfield owns a four rod right of way. The state owns a three road right of way through this area;
- Current plans have the sidewalk and bike lane construction in 2006 or 2007;
- New water and sewer lines will be placed under both sides of the road. Water and sewer system still under design;
- A new pump station will be placed in the rear of the Bridge Street Marketplace;
- Bannon determined that a new archeological assessment is not needed for the sidewalk and bike lane project if they stay within the existing paved area (i.e. no additional impacts);
- Bannon is finding it difficult to fit both a regulation bike lane and parallel parking along VT 100 through the village;
- How can parking be made more visible for visitors and guests? Examine possibility of enhanced parking guidance signage;

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- How to make VT 100 crosswalk at Bridge Street more visible to drivers?;
- Consider feasibility of new crosswalk across VT 100 from school to Old County Road;
- Health Center off of Old County Road to be reconstructed. May build sidewalks in front of parcel as part of reconstruction;
- RSG should identify leach fields located under proposed expanded parking locations. It should be assumed that they will be removed once the sewer system is running;
- VTrans has a resurfacing project scheduled for 2006/2007 along VT 100.

RESOURCE SYSTEMS GROUP INCORPORATED

WAITSFIELD STEERING COMMITTEE MEETING

Meeting Notes
October 20, 2004
Mad River Planning District Office
Waitsfield, Vermont

In attendance:

Janice Kenyon-Bridge Street Marketplace; Steve Gladczuk-Central Vermont Regional Planning Commission (CVRPC); Aimee Neveau-Vermont Agency of Transportation (VTrans); Dee Pierce-Mad River Valley Planning District (MRVD); Bill Bryant-Town of Waitsfield; Megan Moffroid-Waitsfield Resident; Russ Bennett-Waitsfield Planning Commission; John Reilly-Waitsfield Planning Commission; and Joe Segale-Resource Systems Group.

MEETING NOTES

- The meeting was held in the General Wait House Conference Room and began at 9:00 a.m.
- This was the first meeting of the steering committee with the consultant. The purpose of the meeting was to introduce the steering committee members, review the scope of work and identify preliminary issues. A kick-off meeting was held on October 10, 2004 with staff from MRVD, CVRPC, VTrans, Town of Waitsfield, and the engineers for the east-side sidewalk project and the sewer project.
- Joe Segale reviewed the role of the steering committee members which will include a time commitment of five steering committee meetings and three public meetings; providing local knowledge; assisting with land owner contacts; reviewing and commenting on draft products; and ultimately endorsing the recommendations contained in the final report.
- There was some discussion on how to inform the public about this project. Dee Pierce stated that periodic articles could be submitted to the two local newspapers (Valley Reporter and the Vermont Journal).
- Joe Segale reviewed the scope of work and schedule. Discussion on specific tasks are a follows:
  - Task 2-Document Existing Conditions. Joe reported that traffic data and parking counts have been collected during the Baked Beads sale and RSG is in the process of collecting additional parking counts today. Steve Gladczuk suggested contacting the county sheriff for accident data. There seemed to be a general feeling that weekday parking was not an issue. Parking is a issue for special events.
  - Task 3-Local Concerns Meeting. Attendance at the public meetings can be encouraged through the articles to be prepared for the local newspapers.

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- Task 4-Evaluate Options. Keeping improvements within the public right-of-way was identified as a critical issue. Russ Bennett and Megan Moffroid discussed the merits of sharing parking and bicycle lanes and whether or not that combination is safe or appropriate in a village setting. The Irasville-Waitsfield transportation path includes bicycle lanes on each side of VT 100. Bicycle lanes are by definition available for use only by bicycles. However, that space is also used for on-street parking in the Village. Janice Kenyon pointed out that the Bridge Street Marketplace consists of four buildings owned by 4 different owners. The green space located in the center of the Bridge Street Market parking lot is valued by the owners and employees in the buildings. Russ Bennett pointed out that the Bridge Street Market Place lot also provides access to the Mad River. Therefore, parking serves recreational uses in addition to employees, shoppers, and other visitors. Some preliminary ideas on how circulation could be improved through that lot while enhancing its border and access to the Mad River were discussed. Other preliminary ideas discussed include connecting the parking lots of the General Wait House and the Fire Station and a possible connection from Bridge Street to the Waitsfield Church.
- Tasks 5-Pubic Meeting; Task 6 Draft Report; and Task 7 Final Public Meeting and Plan. The tasks were reviewed. There were no specific comments.

- The second steering committee meeting will be held in January after the first Project Memorandum documenting existing conditions is produced.

Prepared by Joe Segale.

APPENDIX D

VT 100-Bridge Street Intersection: Traffic Volumes and Level of Service Worksheets

VT 100-Bridge Street: AM Peak Hour Volumes

03/01/06 02:30 PM

Synchro Node

1 VT 100 - Bridge Street
Waitsfield, VT
10/20/2004
3rd Wednesday

AM Raw Count Data

	EB	WB	NB	SB	
LT	2	38	3	57	
TH	0	1	275	286	
RT	4	118	29	5	818
Enter	6	157	307	348	818
Exit	87	8	406	317	818
% Trucks	0.0%	0.0%	2.9%	4.3%	
PHF	0.83				
Peak Hour	7:30 AM - 8:30 AM Peak				

DHV & Annual Adjustments to 2005

W228 VT100 15 ft N of VT17
1.6% Annual Growth Rate

Count Year	2004
Average DHV Adjustment	1.31
Annual Adjustment	1.02
DHV & Annual Adjustment	1.33

Adjusted 2005

	EB	WB	NB	SB	
LT	2	51	3	76	
TH	0	1	367	381	
RT	4	157	39	5	1086
Enter	6	209	408	462	1086
Exit	116	8	541	421	1086

ODVs Sugarbush

Total ODV's Generated by Sugarbush:
314 during MD (assume all on VT 100)

	EB	WB	NB	SB	
LT					
TH			154	160	
RT					314
Enter	0	0	154	160	314
Exit	0	0	160	154	314

Adjusted Raw Counts 2010

1.080 Annual Adjustment

	EB	WB	NB	SB	
LT	2	55	3	82	
TH	0	1	396	412	
RT	4	170	42	5	1171
Enter	6	226	441	499	1171
Exit	125	8	584	455	1171

Adjusted 2010

	EB	WB	NB	SB	
LT	2	55	3	82	
TH	0	1	550	572	
RT	4	170	42	5	1485
Enter	6	226	594	659	1485
Exit	125	8	744	608	1485

Adjusted Raw Counts 2015

1.166 Annual Adjustment

	EB	WB	NB	SB	
LT	2	59	3	89	
TH	0	1	428	445	
RT	4	183	45	5	1264
Enter	6	244	476	538	1264
Exit	135	8	630	491	1264

Build Out 2015

Based on "Waitsfield Circulation & Access Management Plan" assumptions, 1999.

	EB	WB	NB	SB	
LT		8		13	
TH			201	209	
RT		26	6		464
Enter	0	35	207	222	464
Exit	19	0	235	209	464

Adjusted 2015

	EB	WB	NB	SB	
LT	2	68	3	101	
TH	0	1	782	813	
RT	4	210	52	5	2041
Enter	6	278	837	920	2041
Exit	154	8	1025	854	2041

Impact of New Road

	EB	WB	NB	SB	
LT	40	0	19	0	
TH	0	0	-19	-31	
RT	31	0	0	0	40
Enter	72	0	0	-31	40
Exit	0	19	9	12	40

Volumes with New Road

	EB	WB	NB	SB
LT	42	55	22	82
TH	0	1	531	540
RT	35	170	42	5
Enter	78	226	594	627
Exit	125	27	753	621

VT 100-Bridge Street: Mid-Day Peak Hour Volumes

03/01/06 02:30 PM

Synchro Node

1 VT 100 - Bridge Street
Waitsfield, VT
10/20/2004
3rd Wednesday

MD Raw Count Data

	EB	WB	NB	SB	
LT	3	56	5	31	
TH	1	3	219	238	
RT	11	46	66	7	686
Enter	15	105	290	276	686
Exit	100	13	287	286	686
% Trucks	0.0%	0.0%	4.1%	6.2%	
PHF	0.92				
Peak Hour	12:00 PM - 1:00 PM Peak				

DHV & Annual Adjustments to 2005

W228 VT100 15 ft N of VT17
1.6% Annual Growth Rate

Count Year	2004
Average DHV Adjustment	1.31
Annual Adjustment	1.02
DHV & Annual Adjustment	1.33

Adjusted 2005

	EB	WB	NB	SB	
LT	3	75	5	41	
TH	1	3	292	317	
RT	11	61	88	7	905
Enter	15	139	385	366	905
Exit	132	13	382	378	905

ODVs Sugarbush

Total ODV's Generated by Sugarbush:
261 during MD (assume all on VT 100)

	EB	WB	NB	SB	
LT					
TH			125	136	
RT					261
Enter	0	0	125	136	261
Exit	0	0	136	125	261

Adjusted Raw Counts 2010

1.080 Annual Adjustment

	EB	WB	NB	SB	
LT	3	81	5	45	
TH	1	3	315	343	
RT	11	66	95	7	975
Enter	15	150	415	394	975
Exit	143	13	412	407	975

Adjusted 2010

	EB	WB	NB	SB	
LT	3	81	5	45	
TH	1	3	441	479	
RT	11	66	95	7	1236
Enter	15	150	541	530	1236
Exit	143	13	548	532	1236

Adjusted Raw Counts 2015

1.166 Annual Adjustment

	EB	WB	NB	SB	
LT	3	87	5	48	
TH	1	3	341	370	
RT	11	72	103	7	1050
Enter	15	162	448	425	1050
Exit	154	13	445	439	1050

Build Out 2015

Based on "Waitsfield Circulation & Access Management Plan" assumptions, 1999.

	EB	WB	NB	SB	
LT		12		7	
TH			160	174	
RT		10	15		378
Enter	0	23	175	181	378
Exit	22	0	184	172	378

Adjusted 2015

	EB	WB	NB	SB	
LT	3	100	5	55	
TH	1	3	626	680	
RT	11	82	117	7	1689
Enter	15	184	748	742	1689
Exit	175	13	765	736	1689

Scenario Chooser 2

1 PM 2005 4
2 PM 2010 5
3 PM 2015 6

	EB	WB	NB	SB	
LT	3	81	5	45	
TH	1	3	441	479	
RT	11	66	95	7	1236
Enter	15	150	541	530	1236
Exit	143	13	548	532	1236

Impact of New Road

	EB	WB	NB	SB	
LT	45	0	22	0	
TH	0	0	-22	-31	
RT	31	0	0	0	45
Enter	75	0	0	-31	45
Exit	0	22	14	9	45

Volumes with New Road

	EB	WB	NB	SB	
LT	48	81	27	45	
TH	1	3	419	448	
RT	42	66	95	7	1281
Enter	90	150	541	500	1281
Exit	143	35	562	541	1281

VT 100-Bridge Street: PM Peak Hour Volumes

PM Raw Count Data

	EB	WB	NB	SB	
LT	4	72	3	59	
TH	25	18	277	299	
RT	11	36	65	4	873
Enter	40	126	345	362	873
Exit	142	32	339	360	873
% Trucks	0.0%	0.0%	1.7%	0.8%	
PHF	0.91				
Peak Hour	4:30 PM - 5:30 PM Peak				

DHV & Annual Adjustments to 2005

	Name	Location
DHV	W228	VT100 15 ft N of VT17
	Rate	Source
Annual	1.6%	VTrans 2003 Red Book-Rural Primary & Secondary

Count Year	DHV	Corr. Count	DHV Adj.
2004	1042	794	1.31
		Annual Adjustment	1.02
		DHV & Annual Adjustment	1.33

Adjusted 2005

	EB	WB	NB	SB	
LT	4	96	3	79	
TH	25	18	369	399	
RT	11	48	87	4	1142
Enter	40	162	459	481	1142
Exit	183	32	451	476	1142

ODVs

Sugarbush

Total ODV's Generated by Sugarbush:
330 during DHV (assume all on VT 100)

	EB	WB	NB	SB	
LT					
TH			159	171	
RT					330
Enter	0	0	159	171	330
Exit	0	0	171	159	330

Adjusted Raw Counts 2010

1.080 Annual Adjustment

	EB	WB	NB	SB	
LT	4	104	3	85	
TH	25	18	399	431	
RT	11	52	94	4	1228
Enter	40	174	495	519	1228
Exit	197	32	486	513	1228

Adjusted 2010

	EB	WB	NB	SB	
LT	4	104	3	85	
TH	25	18	558	602	
RT	11	52	94	4	1558
Enter	40	174	654	691	1558
Exit	197	32	658	672	1558

Adjusted Raw Counts 2015

1.166 Annual Adjustment

	EB	WB	NB	SB	
LT	4	112	3	92	
TH	25	18	431	465	
RT	11	56	101	4	1321
Enter	40	186	535	561	1321
Exit	211	32	525	554	1321

Build Out 2015

Based on "Waitsfield Circulation & Access Management Plan" assumptions, 1999.

	EB	WB	NB	SB	
LT		16		13	
TH			202	218	
RT		8	14		472
Enter	0	24	217	231	472
Exit	28	0	226	218	472

Adjusted 2015

	EB	WB	NB	SB	
LT	4	128	3	105	
TH	25	18	792	855	
RT	11	64	116	4	2124
Enter	40	210	910	963	2124
Exit	238	32	923	931	2124

Scenario Chooser

2

1	PM 2005	4
2	PM 2010	5
3	PM 2015	6

	EB	WB	NB	SB	
LT	4	104	3	85	
TH	25	18	558	602	
RT	11	52	94	4	1558
Enter	40	174	654	691	1558
Exit	197	32	658	672	1558

Impact of New Road

	EB	WB	NB	SB	
LT	40	0	19	0	
TH	0	0	-19	-26	
RT	26	0	0	0	40
Enter	66	0	0	-26	40
Exit	0	19	14	7	40

Volumes with New Road

	EB	WB	NB	SB	
LT	44	104	22	85	
TH	25	18	538	576	
RT	37	52	94	4	1598
Enter	106	174	654	665	1598
Exit	197	51	672	679	1598

Estimated Traffic diverted to Farr Lane (EB) approach of VT 100-Bridge-Farr Lane intersection due to New Local Road

I. Diversion of Existing Traffic from Village Grocery and Parsonage Lane

a. Existing traffic volumes at Village Grocery/Parsonage Lane intersection with V 100:

Traffic entering and exiting Village Grocery (VG) and Parsonage Lane
Does not show through traffic on VT 100
Date: Thu Oct 21, 2004
Treats VG Drive and Parsonage Lane as one approach (EB approach)

VT 100-VG/Parsonage Lane (AM Peak Hour)

	EB	WB	NB	SB	
LT	24		23		
TH					
RT	15			31	93
Enter	39	0	23	31	93
Exit	0	54	24	15	93

VT 100-VG/Parsonage Lane (12:00-1:00 PM)

	EB	WB	NB	SB	
LT	33		33		
TH					
RT	19			19	104
Enter	52	0	33	19	104
Exit	0	52	33	19	104

b. Affect on VT 100 - Farr Lane Intersection

Assumptions:
- All traffic exiting VG/Parsonage Lane is assumed to exit through Farr Lane because the current VG/Parsonage Lane entrance wil be converted to one-way in
- Assumes 1/2 of left turns from V 100 NB use Farr Lane and 1/2 continue to use existing VG/Parsonage Lane entrance

AM Peak Hour
VT 100-Bridge St-Farr Lane

	EB (Farr Ln	WB	NB	SB	
LT	24		12		
TH			-12	-15	
RT	15				24
Enter	39	0	0	-15	24
Exit	0	12	9	4	24

Mid-day Peak Hour
VT 100-Bridge St-Farr Lane

	EB	WB	NB	SB	
LT	33		17		
TH			-17	-19	
RT	19				33
Enter	52	0	0	-19	33
Exit	0	17	14	3	33

(Do not have PM peak hour count data - so assume PM p
PM Peak Hour
VT 100-Bridge St-Farr Lane

	EB	WB	NB	SB	
LT	33		17		
TH			-17	-19	
RT	19				33
Enter	52	0	0	-19	33
Exit	0	17	14	3	33

II. Traffic from Other Existing Buildings along New Road

a. The new road is located behind these buildings and wil therefore carry some of the traffic to and from each:

	Footprint (sf)
Kehoe Design	1650
No Wirz	1800
Fit Wirz	2375
Cabin Feaver	3375
total	9200 sf

b. Trip generation assuming redevelopment of these buildings into mix of Specialty Retail

LU Code 814 - Specialty Retail

Peak Hour	Size (Square Feet)	Trip Generation Rate (Vehicles per Hour/1000 GSLA)	In	Out	In	Out	Total
AM Peak Hour	9200	6.84	48%	52%	30	33	63
Mid-day	No rates avail - assume average of AM and PM				21	23	44
PM Peak Hour	9,200	2.71	44%	56%	11	14	25

Directional Split of Traffic on VT 100
Vols from Ground Count

	AM	MD	PM
SB	348	276	362
NB	317	286	360

	AM	MD	PM
SB	52%	49%	50%
NB	48%	51%	50%

Assume 50% NB abd 50% SB for all time periods.

c. To simplify, assume all buildings currently have one access road on VT 100. The driveway traffic for the three time periods is shown below

VT 100-Pseudo Entrance (AM Peak)

	EB	WB	NB	SB	
LT	16		15		
TH					
RT	16			15	63
Enter	33	0	15	15	63
Exit	0	30	16	16	63

VT 100-Pseudo Entrance (Mid-day Peak)

	EB	WB	NB	SB	
LT	12		10		
TH					
RT	12			10	44
Enter	23	0	10	10	44
Exit	0	21	12	12	44

VT 100-Pseudo Entrance (PM Peak)

	EB	WB	NB	SB	
LT	7		5		
TH					
RT	7			5	25
Enter	14	0	5	5	25
Exit	0	11	7	7	25

c. Diversion of Traffic To VT 100-Farr Lane-Bridge Street

Assumptions:
- All traffic exiting these buildings is assumed to exit through Farr Lane because the New Road will be one-way in.
- Assumes that all traffic to and from these buildings will use the New Road. This is consertave assumption because some will use the on-street parking along VT 100.
- Assumes 1/2 of left turns from V 100 NB use Farr Lane to New Road and 1/2 use existing VT 100 On-Street Parking

AM Peak Hour
VT 100-Bridge St-Farr Lane

	EB (Farr Ln	WB	NB	SB	
LT	16		8		
TH			-8	-16	
RT	16				16
Enter	33	0	0	-16	16
Exit	0	8	0	9	16

Mid-day Peak Hour
VT 100-Bridge St-Farr Lane

	EB	WB	NB	SB	
LT	12		5		
TH			-5	-12	
RT	12				12
Enter	23	0	0	-12	12
Exit	0	5	0	7	12

PM Peak Hour
VT 100-Bridge St-Farr Lane

	EB	WB	NB	SB	
LT	7		3		
TH			-3	-7	
RT	7				7
Enter	14	0	0	-7	7
Exit	0	3	0	4	7

III. Total Affect of New Road on VT 100-Farr Lane-Bridge Street

AM Peak Hour
VT 100-Bridge St-Farr Lane

	EB (Farr Ln	WB	NB	SB	
LT	40	0	19	0	
TH	0	0	-19	-31	
RT	31	0	0	0	40
Enter	72	0	0	-31	40
Exit	0	19	9	12	40

Mid-day Peak Hour
VT 100-Bridge St-Farr Lane

	EB	WB	NB	SB	
LT	45	0	22	0	
TH	0	0	-22	-31	
RT	31	0	0	0	45
Enter	75	0	0	-31	45
Exit	0	22	14	9	45

PM Peak Hour
VT 100-Bridge St-Farr Lane

	EB	WB	NB	SB	
LT	40	0	19	0	
TH	0	0	-19	-26	
RT	26	0	0	0	40
Enter	66	0	0	-26	40
Exit	0	19	14	7	40

Estimated Traffic Volume of New Road

	VT 100 to f	Parking Lot to Farr Lane
AM	48	91
MD	28	97
PM	17	85
AADT	480	970

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	2	0	4	51	1	157	3	367	39	76	381	5
Peak Hour Factor	0.50	1.00	1.00	0.63	1.00	0.92	0.25	0.76	1.00	1.00	0.85	1.00
Hourly flow rate (vph)	4	0	4	81	1	171	12	483	39	76	448	5
Pedestrians					2			1			3	
Lane Width (ft)					10.0			11.0			11.0	
Walking Speed (ft/s)					4.0			4.0			4.0	
Percent Blockage					0			0			0	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1303	1151	452	1136	1134	507	453			524		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1303	1151	452	1136	1134	507	453			524		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	96	100	99	52	99	70	99			93		
cM capacity (veh/h)	90	183	612	168	187	567	1102			1031		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	8	253	534	529
Volume Left	4	81	12	76
Volume Right	4	171	39	5
cSH	157	320	1102	1031
Volume to Capacity	0.05	0.79	0.01	0.07
Queue Length 95th (ft)	4	160	1	6
Control Delay (s)	29.1	47.9	0.3	2.0
Lane LOS	D	E	A	A
Approach Delay (s)	29.1	47.9	0.3	2.0
Approach LOS	D	E		

Intersection Summary			
Average Delay	10.2		
Intersection Capacity Utilization	78.5%	ICU Level of Service	D
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	4	25	11	96	18	48	3	369	87	79	399	4
Peak Hour Factor	0.33	1.00	1.00	1.00	1.00	0.90	1.00	0.83	1.00	1.00	0.76	0.50
Hourly flow rate (vph)	12	25	11	96	18	53	3	445	87	79	525	8
Pedestrians		8			8			2			14	
Lane Width (ft)		12.0			10.0			11.0			11.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		1			1			0			1	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1265	1241	539	1215	1201	510	541			540		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1265	1241	539	1215	1201	510	541			540		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	89	84	98	25	89	90	100			92		
cM capacity (veh/h)	112	161	542	128	169	558	1021			1028		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	48	167	535	612
Volume Left	12	96	3	79
Volume Right	11	53	87	8
cSH	169	175	1021	1028
Volume to Capacity	0.28	0.95	0.00	0.08
Queue Length 95th (ft)	28	186	0	6
Control Delay (s)	34.5	109.7	0.1	2.0
Lane LOS	D	F	A	A
Approach Delay (s)	34.5	109.7	0.1	2.0
Approach LOS	D	F		

Intersection Summary			
Average Delay	15.6		
Intersection Capacity Utilization	83.6%	ICU Level of Service	E
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	3	1	11	75	3	61	5	292	88	41	317	7
Peak Hour Factor	1.00	1.00	1.00	0.74	1.00	0.77	1.00	0.83	1.00	1.00	0.98	0.58
Hourly flow rate (vph)	3	1	11	101	3	79	5	352	88	41	323	12
Pedestrians					9			2			11	
Lane Width (ft)					10.0			11.0			11.0	
Walking Speed (ft/s)					4.0			4.0			4.0	
Percent Blockage					1			0			1	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	909	870	332	840	832	416	336			449		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	909	870	332	840	832	416	336			449		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.2		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.3		
p0 queue free %	99	100	98	62	99	87	100			96		
cM capacity (veh/h)	214	278	714	270	292	632	1213			1084		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	15	184	445	377
Volume Left	3	101	5	41
Volume Right	11	79	88	12
cSH	454	359	1213	1084
Volume to Capacity	0.03	0.51	0.00	0.04
Queue Length 95th (ft)	3	70	0	3
Control Delay (s)	13.2	25.1	0.1	1.3
Lane LOS	B	D	A	A
Approach Delay (s)	13.2	25.1	0.1	1.3
Approach LOS	B	D		

Intersection Summary			
Average Delay	5.2		
Intersection Capacity Utilization	70.2%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	2	0	4	55	1	170	3	550	42	82	572	5
Peak Hour Factor	0.50	1.00	1.00	0.63	1.00	0.92	0.25	0.76	1.00	1.00	0.85	1.00
Hourly flow rate (vph)	4	0	4	87	1	185	12	724	42	82	673	5
Pedestrians					2			1			3	
Lane Width (ft)					10.0			11.0			11.0	
Walking Speed (ft/s)					4.0			4.0			4.0	
Percent Blockage					0			0			0	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1796	1631	676	1615	1613	750	678			768		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1796	1631	676	1615	1613	750	678			768		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	87	100	99	0	99	55	99			90		
cM capacity (veh/h)	32	91	456	76	94	413	909			836		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	8	273	778	760
Volume Left	4	87	12	82
Volume Right	4	185	42	5
cSH	59	170	909	836
Volume to Capacity	0.14	1.60	0.01	0.10
Queue Length 95th (ft)	11	460	1	8
Control Delay (s)	75.4	344.7	0.4	2.5
Lane LOS	F	F	A	A
Approach Delay (s)	75.4	344.7	0.4	2.5
Approach LOS	F	F		

Intersection Summary			
Average Delay	53.3		
Intersection Capacity Utilization	102.3%	ICU Level of Service	G
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	4	25	11	104	18	52	3	558	94	85	602	4
Peak Hour Factor	0.33	1.00	1.00	1.00	1.00	0.90	1.00	0.83	1.00	1.00	0.76	0.50
Hourly flow rate (vph)	12	25	11	104	18	58	3	672	94	85	792	8
Pedestrians		8			8			2			14	
Lane Width (ft)		12.0			10.0			11.0			11.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		1			1			0			1	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1780	1754	806	1725	1711	741	808			774		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1780	1754	806	1725	1711	741	808			774		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	71	67	97	0	78	86	100			90		
cM capacity (veh/h)	41	76	382	47	81	413	812			841		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	48	180	769	885
Volume Left	12	104	3	85
Volume Right	11	58	94	8
cSH	74	69	812	841
Volume to Capacity	0.65	2.59	0.00	0.10
Queue Length 95th (ft)	73	441	0	8
Control Delay (s)	117.7	851.0	0.1	2.6
Lane LOS	F	F	A	A
Approach Delay (s)	117.7	851.0	0.1	2.6
Approach LOS	F	F		

Intersection Summary			
Average Delay	85.6		
Intersection Capacity Utilization	108.0%	ICU Level of Service	G
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	3	1	11	81	3	66	5	441	95	45	479	7
Peak Hour Factor	1.00	1.00	1.00	0.74	1.00	0.77	1.00	0.83	1.00	1.00	0.98	0.58
Hourly flow rate (vph)	3	1	11	109	3	86	5	531	95	45	489	12
Pedestrians					9			2			11	
Lane Width (ft)					10.0			11.0			11.0	
Walking Speed (ft/s)					4.0			4.0			4.0	
Percent Blockage					1			0			1	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1272	1230	497	1196	1189	599	501			635		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1272	1230	497	1196	1189	599	501			635		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.2		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.3		
p0 queue free %	97	99	98	28	98	83	100			95		
cM capacity (veh/h)	113	169	576	152	178	498	1053			923		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	15	198	631	546
Volume Left	3	109	5	45
Volume Right	11	86	95	12
cSH	291	218	1053	923
Volume to Capacity	0.05	0.91	0.00	0.05
Queue Length 95th (ft)	4	187	0	4
Control Delay (s)	18.1	85.6	0.1	1.3
Lane LOS	C	F	A	A
Approach Delay (s)	18.1	85.6	0.1	1.3
Approach LOS	C	F		

Intersection Summary			
Average Delay	13.0		
Intersection Capacity Utilization	85.1%	ICU Level of Service	E
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	2	0	4	68	1	210	3	782	52	101	813	5
Peak Hour Factor	0.50	1.00	1.00	0.63	1.00	0.92	0.25	0.76	1.00	1.00	0.85	1.00
Hourly flow rate (vph)	4	0	4	108	1	228	12	1029	52	101	956	5
Pedestrians					2			1			3	
Lane Width (ft)					10.0			11.0			11.0	
Walking Speed (ft/s)					4.0			4.0			4.0	
Percent Blockage					0			0			0	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	2472	2268	960	2247	2244	1060	961			1083		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	2472	2268	960	2247	2244	1060	961			1083		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	0	100	99	0	97	17	98			84		
cM capacity (veh/h)	3	34	314	26	35	274	712			636		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	8	337	1093	1062
Volume Left	4	108	12	101
Volume Right	4	228	52	5
cSH	6	67	712	636
Volume to Capacity	1.38	5.06	0.02	0.16
Queue Length 95th (ft)	47	Err	1	14
Control Delay (s)	1341.3	Err	0.6	5.0
Lane LOS	F	F	A	A
Approach Delay (s)	1341.3	Err	0.6	5.0
Approach LOS	F	F		

Intersection Summary			
Average Delay	1355.0		
Intersection Capacity Utilization	136.0%	ICU Level of Service	H
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	4	25	11	128	18	64	3	792	116	105	855	4
Peak Hour Factor	0.33	1.00	1.00	1.00	1.00	0.90	1.00	0.83	1.00	1.00	0.76	0.50
Hourly flow rate (vph)	12	25	11	128	18	71	3	954	116	105	1125	8
Pedestrians		8			8			2			14	
Lane Width (ft)		12.0			10.0			11.0			11.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		1			1			0			1	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	2459	2431	1139	2391	2377	1034	1141			1078		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	2459	2431	1139	2391	2377	1034	1141			1078		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	0	6	96	0	38	75	100			84		
cM capacity (veh/h)	7	27	245	3	29	280	608			647		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	48	217	1073	1238
Volume Left	12	128	3	105
Volume Right	11	71	116	8
cSH	17	6	608	647
Volume to Capacity	2.75	38.68	0.00	0.16
Queue Length 95th (ft)	164	Err	0	14
Control Delay (s)	1246.6	Err	0.2	6.2
Lane LOS	F	F	A	A
Approach Delay (s)	1246.6	Err	0.2	6.2
Approach LOS	F	F		

Intersection Summary			
Average Delay	868.9		
Intersection Capacity Utilization	141.5%	ICU Level of Service	H
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	3	1	11	100	3	82	5	626	117	55	680	7
Peak Hour Factor	1.00	1.00	1.00	0.74	1.00	0.77	1.00	0.83	1.00	1.00	0.98	0.58
Hourly flow rate (vph)	3	1	11	135	3	106	5	754	117	55	694	12
Pedestrians					9			2			11	
Lane Width (ft)					10.0			11.0			11.0	
Walking Speed (ft/s)					4.0			4.0			4.0	
Percent Blockage					1			0			1	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1752	1700	702	1655	1648	833	706			880		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1752	1700	702	1655	1648	833	706			880		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.2		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.3		
p0 queue free %	93	99	98	0	97	71	99			93		
cM capacity (veh/h)	43	85	441	71	92	366	883			747		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	15	245	876	761
Volume Left	3	135	5	55
Volume Right	11	106	117	12
cSH	142	110	883	747
Volume to Capacity	0.11	2.23	0.01	0.07
Queue Length 95th (ft)	9	530	0	6
Control Delay (s)	33.4	644.9	0.2	1.9
Lane LOS	D	F	A	A
Approach Delay (s)	33.4	644.9	0.2	1.9
Approach LOS	D	F		

Intersection Summary			
Average Delay	84.3		
Intersection Capacity Utilization	108.6%	ICU Level of Service	G
Analysis Period (min)	15		

2005 AM - Alt 2 - Add Right Turn Lane on Bridge St

3: Bridge Street & VT 100

Baseline

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	2	0	4	51	1	157	3	367	39	76	381	5
Peak Hour Factor	0.50	1.00	1.00	0.63	1.00	0.92	0.25	0.76	1.00	1.00	0.85	1.00
Hourly flow rate (vph)	4	0	4	81	1	171	12	483	39	76	448	5
Pedestrians					2			1			3	
Lane Width (ft)					10.0			11.0			11.0	
Walking Speed (ft/s)					4.0			4.0			4.0	
Percent Blockage					0			0			0	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1303	1151	452	1136	1134	507	453			524		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1303	1151	452	1136	1134	507	453			524		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	96	100	99	52	99	70	99			93		
cM capacity (veh/h)	90	183	612	168	187	567	1102			1031		

Direction, Lane #	EB 1	WB 1	WB 2	NB 1	SB 1
Volume Total	8	82	171	534	529
Volume Left	4	81	0	12	76
Volume Right	4	0	171	39	5
cSH	157	168	567	1102	1031
Volume to Capacity	0.05	0.49	0.30	0.01	0.07
Queue Length 95th (ft)	4	59	31	1	6
Control Delay (s)	29.1	45.4	14.1	0.3	2.0
Lane LOS	D	E	B	A	A
Approach Delay (s)	29.1	24.2		0.3	2.0
Approach LOS	D	C			

Intersection Summary			
Average Delay	5.7		
Intersection Capacity Utilization	70.0%	ICU Level of Service	C
Analysis Period (min)	15		

2005 PM - Alt 2 - Add Right Turn Lane on Bridge St

3: Bridge Street & VT 100

Baseline

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	4	25	11	96	18	48	3	369	87	79	399	4
Peak Hour Factor	0.33	1.00	1.00	1.00	1.00	0.90	1.00	0.83	1.00	1.00	0.76	0.50
Hourly flow rate (vph)	12	25	11	96	18	53	3	445	87	79	525	8
Pedestrians		8			8			2			14	
Lane Width (ft)		12.0			10.0			11.0			11.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		1			1			0			1	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1265	1241	539	1215	1201	510	541			540		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1265	1241	539	1215	1201	510	541			540		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	89	84	98	25	89	90	100			92		
cM capacity (veh/h)	112	161	542	128	169	558	1021			1028		

Direction, Lane #	EB 1	WB 1	WB 2	NB 1	SB 1
Volume Total	48	114	53	535	612
Volume Left	12	96	0	3	79
Volume Right	11	0	53	87	8
cSH	169	133	558	1021	1028
Volume to Capacity	0.28	0.86	0.10	0.00	0.08
Queue Length 95th (ft)	28	137	8	0	6
Control Delay (s)	34.5	107.5	12.1	0.1	2.0
Lane LOS	D	F	B	A	A
Approach Delay (s)	34.5	77.1		0.1	2.0
Approach LOS	D	F			

Intersection Summary				
Average Delay	11.6			
Intersection Capacity Utilization	79.9%	ICU Level of Service	D	
Analysis Period (min)	15			

2010/2025 AM - Alt 2 - Add Right Turn Lane on Bridge St

3: Bridge Street & VT 100 Baseline

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	2	0	4	55	1	170	3	550	42	82	572	5
Peak Hour Factor	0.50	1.00	1.00	0.63	1.00	0.92	0.25	0.76	1.00	1.00	0.85	1.00
Hourly flow rate (vph)	4	0	4	87	1	185	12	724	42	82	673	5
Pedestrians					2			1			3	
Lane Width (ft)					10.0			11.0			11.0	
Walking Speed (ft/s)					4.0			4.0			4.0	
Percent Blockage					0			0			0	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1796	1631	676	1615	1613	750	678			768		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1796	1631	676	1615	1613	750	678			768		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	87	100	99	0	99	55	99			90		
cM capacity (veh/h)	32	91	456	76	94	413	909			836		

Direction, Lane #	EB 1	WB 1	WB 2	NB 1	SB 1
Volume Total	8	88	185	778	760
Volume Left	4	87	0	12	82
Volume Right	4	0	185	42	5
cSH	59	76	413	909	836
Volume to Capacity	0.14	1.15	0.45	0.01	0.10
Queue Length 95th (ft)	11	164	56	1	8
Control Delay (s)	75.4	247.0	20.6	0.4	2.5
Lane LOS	F	F	C	A	A
Approach Delay (s)	75.4	93.8		0.4	2.5
Approach LOS	F	F			

Intersection Summary				
Average Delay	15.6			
Intersection Capacity Utilization	93.0%	ICU Level of Service	F	
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	4	25	11	104	18	52	3	558	94	85	602	4
Peak Hour Factor	0.33	1.00	1.00	1.00	1.00	0.90	1.00	0.83	1.00	1.00	0.76	0.50
Hourly flow rate (vph)	12	25	11	104	18	58	3	672	94	85	792	8
Pedestrians		8			8			2			14	
Lane Width (ft)		12.0			10.0			11.0			11.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		1			1			0			1	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1780	1754	806	1725	1711	741	808			774		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1780	1754	806	1725	1711	741	808			774		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	71	67	97	0	78	86	100			90		
cM capacity (veh/h)	41	76	382	47	81	413	812			841		

Direction, Lane #	EB 1	WB 1	WB 2	NB 1	SB 1
Volume Total	48	122	58	769	885
Volume Left	12	104	0	3	85
Volume Right	11	0	58	94	8
cSH	74	50	413	812	841
Volume to Capacity	0.65	2.45	0.14	0.00	0.10
Queue Length 95th (ft)	73	316	12	0	8
Control Delay (s)	117.7	837.3	15.1	0.1	2.6
Lane LOS	F	F	C	A	A
Approach Delay (s)	117.7	573.1		0.1	2.6
Approach LOS	F	F			

Intersection Summary			
Average Delay	59.0		
Intersection Capacity Utilization	104.1%	ICU Level of Service	G
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	2	0	4	68	1	210	3	782	52	101	813	5
Peak Hour Factor	0.50	1.00	1.00	0.63	1.00	0.92	0.25	0.76	1.00	1.00	0.85	1.00
Hourly flow rate (vph)	4	0	4	108	1	228	12	1029	52	101	956	5
Pedestrians					2			1			3	
Lane Width (ft)					10.0			11.0			11.0	
Walking Speed (ft/s)					4.0			4.0			4.0	
Percent Blockage					0			0			0	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	2472	2268	960	2247	2244	1060	961			1083		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	2472	2268	960	2247	2244	1060	961			1083		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	0	100	99	0	97	17	98			84		
cM capacity (veh/h)	3	34	314	26	35	274	712			636		

Direction, Lane #	EB 1	WB 1	WB 2	NB 1	SB 1
Volume Total	8	109	228	1093	1062
Volume Left	4	108	0	12	101
Volume Right	4	0	228	52	5
cSH	6	26	274	712	636
Volume to Capacity	1.38	4.23	0.83	0.02	0.16
Queue Length 95th (ft)	47	Err	171	1	14
Control Delay (s)	1341.3	Err	60.3	0.6	5.0
Lane LOS	F	F	F	A	A
Approach Delay (s)	1341.3	3271.1		0.6	5.0
Approach LOS	F	F			

Intersection Summary			
Average Delay	447.8		
Intersection Capacity Utilization	124.3%	ICU Level of Service	H
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	4	25	11	128	18	64	3	792	116	105	855	4
Peak Hour Factor	0.33	1.00	1.00	1.00	1.00	0.90	1.00	0.83	1.00	1.00	0.76	0.50
Hourly flow rate (vph)	12	25	11	128	18	71	3	954	116	105	1125	8
Pedestrians		8			8			2			14	
Lane Width (ft)		12.0			10.0			11.0			11.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		1			1			0			1	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	2459	2431	1139	2391	2377	1034	1141			1078		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	2459	2431	1139	2391	2377	1034	1141			1078		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	0	6	96	0	38	75	100			84		
cM capacity (veh/h)	7	27	245	3	29	280	608			647		

Direction, Lane #	EB 1	WB 1	WB 2	NB 1	SB 1
Volume Total	48	146	71	1073	1238
Volume Left	12	128	0	3	105
Volume Right	11	0	71	116	8
cSH	17	4	280	608	647
Volume to Capacity	2.75	38.42	0.25	0.00	0.16
Queue Length 95th (ft)	164	Err	25	0	14
Control Delay (s)	1246.6	Err	22.2	0.2	6.2
Lane LOS	F	F	C	A	A
Approach Delay (s)	1246.6	6731.3		0.2	6.2
Approach LOS	F	F			

Intersection Summary			
Average Delay	593.5		
Intersection Capacity Utilization	136.7%	ICU Level of Service	H
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	2	0	4	51	1	157	3	367	39	76	381	5
Peak Hour Factor	0.50	1.00	1.00	0.63	1.00	0.92	0.25	0.76	1.00	1.00	0.85	1.00
Hourly flow rate (vph)	4	0	4	81	1	171	12	483	39	76	448	5

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	8	253	534	529
Volume Left (vph)	4	81	12	76
Volume Right (vph)	4	171	39	5
Hadj (s)	-0.20	-0.34	0.01	0.09
Departure Headway (s)	7.5	6.4	5.7	5.8
Degree Utilization, x	0.02	0.45	0.84	0.85
Capacity (veh/h)	423	527	623	612
Control Delay (s)	10.6	14.5	31.6	32.4
Approach Delay (s)	10.6	14.5	31.6	32.4
Approach LOS	B	B	D	D

Intersection Summary			
Delay	28.5		
HCM Level of Service	D		
Intersection Capacity Utilization	78.5%	ICU Level of Service	D
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	4	25	11	96	18	48	3	369	87	79	399	4
Peak Hour Factor	0.33	1.00	1.00	1.00	1.00	0.90	1.00	0.83	1.00	1.00	0.76	0.50
Hourly flow rate (vph)	12	25	11	96	18	53	3	445	87	79	525	8

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	48	167	535	612
Volume Left (vph)	12	96	3	79
Volume Right (vph)	11	53	87	8
Hadj (s)	-0.09	-0.08	-0.06	0.03
Departure Headway (s)	7.5	7.0	5.6	5.6
Degree Utilization, x	0.10	0.32	0.84	0.95
Capacity (veh/h)	444	489	628	612
Control Delay (s)	11.3	13.3	30.7	48.1
Approach Delay (s)	11.3	13.3	30.7	48.1
Approach LOS	B	B	D	E

Intersection Summary			
Delay	35.7		
HCM Level of Service	E		
Intersection Capacity Utilization	83.6%	ICU Level of Service	E
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	2	0	4	68	1	210	3	782	52	101	813	5
Peak Hour Factor	0.50	1.00	1.00	0.63	1.00	0.92	0.25	0.76	1.00	1.00	0.85	1.00
Hourly flow rate (vph)	4	0	4	108	1	228	12	1029	52	101	956	5

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	8	337	1093	1062
Volume Left (vph)	4	108	12	101
Volume Right (vph)	4	228	52	5
Hadj (s)	-0.20	-0.34	0.02	0.08
Departure Headway (s)	8.4	6.7	6.2	6.3
Degree Utilization, x	0.02	0.63	1.88	1.85
Capacity (veh/h)	397	528	588	582
Control Delay (s)	11.6	20.3	419.9	404.6
Approach Delay (s)	11.6	20.3	419.9	404.6
Approach LOS	B	C	F	F

Intersection Summary			
Delay	358.2		
HCM Level of Service	F		
Intersection Capacity Utilization	136.0%	ICU Level of Service	H
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	4	25	11	104	18	52	3	558	94	85	602	4
Peak Hour Factor	0.33	1.00	1.00	1.00	1.00	0.90	1.00	0.83	1.00	1.00	0.76	0.50
Hourly flow rate (vph)	12	25	11	104	18	58	3	672	94	85	792	8

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	48	180	769	885
Volume Left (vph)	12	104	3	85
Volume Right (vph)	11	58	94	8
Hadj (s)	-0.09	-0.08	-0.04	0.03
Departure Headway (s)	7.8	7.2	5.7	5.8
Degree Utilization, x	0.10	0.36	1.22	1.43
Capacity (veh/h)	439	488	637	625
Control Delay (s)	11.7	14.1	134.7	218.1
Approach Delay (s)	11.7	14.1	134.7	218.1
Approach LOS	B	B	F	F

Intersection Summary			
Delay	159.2		
HCM Level of Service	F		
Intersection Capacity Utilization	108.0%	ICU Level of Service	G
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	2	0	4	68	1	210	3	782	52	101	813	5
Peak Hour Factor	0.50	1.00	1.00	0.63	1.00	0.92	0.25	0.76	1.00	1.00	0.85	1.00
Hourly flow rate (vph)	4	0	4	108	1	228	12	1029	52	101	956	5

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	8	337	1093	1062
Volume Left (vph)	4	108	12	101
Volume Right (vph)	4	228	52	5
Hadj (s)	-0.20	-0.34	0.02	0.08
Departure Headway (s)	8.4	6.7	6.2	6.3
Degree Utilization, x	0.02	0.63	1.88	1.85
Capacity (veh/h)	397	528	588	582
Control Delay (s)	11.6	20.3	419.9	404.6
Approach Delay (s)	11.6	20.3	419.9	404.6
Approach LOS	B	C	F	F

Intersection Summary			
Delay	358.2		
HCM Level of Service	F		
Intersection Capacity Utilization	136.0%	ICU Level of Service	H
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	4	25	11	128	18	64	3	792	116	105	855	4
Peak Hour Factor	0.33	1.00	1.00	1.00	1.00	0.90	1.00	0.83	1.00	1.00	0.76	0.50
Hourly flow rate (vph)	12	25	11	128	18	71	3	954	116	105	1125	8

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	48	217	1073	1238
Volume Left (vph)	12	128	3	105
Volume Right (vph)	11	71	116	8
Hadj (s)	-0.09	-0.08	-0.03	0.03
Departure Headway (s)	8.0	7.2	5.9	6.0
Degree Utilization, x	0.11	0.43	1.76	2.05
Capacity (veh/h)	427	489	616	612
Control Delay (s)	12.0	15.6	365.6	495.0
Approach Delay (s)	12.0	15.6	365.6	495.0
Approach LOS	B	C	F	F

Intersection Summary			
Delay	391.7		
HCM Level of Service	F		
Intersection Capacity Utilization	141.5%	ICU Level of Service	H
Analysis Period (min)	15		

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Volume (vph)	2	0	51	1	3	367	76	381
Turn Type	Perm		Perm		Perm		Perm	
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phases	4	4	8	8	2	2	6	6
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0
Total Split (s)	22.0	22.0	22.0	22.0	38.0	38.0	38.0	38.0
Total Split (%)	36.7%	36.7%	36.7%	36.7%	63.3%	63.3%	63.3%	63.3%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	None	None	None	None	Min	Min	Min	Min
Act Effct Green (s)		9.7		9.7		25.9		25.9
Actuated g/C Ratio		0.22		0.22		0.59		0.59
v/c Ratio		0.03		0.66		0.58		0.65
Control Delay		11.3		9.8		8.8		10.4
Queue Delay		0.0		0.0		0.0		0.0
Total Delay		11.3		9.8		8.8		10.4
LOS		B		A		A		B
Approach Delay		11.3		9.8		8.8		10.4
Approach LOS		B		A		A		B

Intersection Summary			
Cycle Length: 60			
Actuated Cycle Length: 44.2			
Natural Cycle: 60			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.66			
Intersection Signal Delay: 9.6		Intersection LOS: A	
Intersection Capacity Utilization 78.5%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 3: Bridge Street & VT 100

Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	8	253	534	529
v/c Ratio	0.03	0.66	0.58	0.65
Control Delay	11.3	9.8	8.8	10.4
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	11.3	9.8	8.8	10.4
Queue Length 50th (ft)	1	12	55	60
Queue Length 95th (ft)	9	83	143	196
Internal Link Dist (ft)	2761	3431	3063	2633
Turn Bay Length (ft)				
Base Capacity (vph)	501	509	1040	919
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.02	0.50	0.51	0.58

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	10	10	10	11	11	11	11	11	11
Total Lost time (s)		4.0			4.0			4.0			4.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frpb, ped/bikes		0.99			0.98			1.00			1.00	
Flpb, ped/bikes		1.00			1.00			1.00			1.00	
Frt		0.93			0.91			0.99			1.00	
Flt Protected		0.98			0.98			1.00			0.99	
Satd. Flow (prot)		1537			1228			1578			1570	
Flt Permitted		0.88			0.89			0.99			0.88	
Satd. Flow (perm)		1391			1112			1562			1395	
Volume (vph)	2	0	4	51	1	157	3	367	39	76	381	5
Peak-hour factor, PHF	0.50	1.00	1.00	0.63	1.00	0.92	0.25	0.76	1.00	1.00	0.85	1.00
Adj. Flow (vph)	4	0	4	81	1	171	12	483	39	76	448	5
RTOR Reduction (vph)	0	3	0	0	133	0	0	4	0	0	0	0
Lane Group Flow (vph)	0	5	0	0	120	0	0	530	0	0	529	0
Confl. Peds. (#/hr)	3		1	1		3			2	2		
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	3%	3%	3%	4%	4%	4%
Bus Blockages (#/hr)	1	0	0	0	0	1	0	1	0	0	1	0
Parking (#/hr)					5							
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		9.7			9.7			25.9			25.9	
Effective Green, g (s)		9.7			9.7			25.9			25.9	
Actuated g/C Ratio		0.22			0.22			0.59			0.59	
Clearance Time (s)		4.0			4.0			4.0			4.0	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		309			247			928			829	
v/s Ratio Prot												
v/s Ratio Perm		0.00			c0.11			0.34			c0.38	
v/c Ratio		0.02			0.49			0.57			0.64	
Uniform Delay, d1		13.2			14.8			5.4			5.8	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		0.0			1.5			0.9			1.6	
Delay (s)		13.2			16.3			6.3			7.4	
Level of Service		B			B			A			A	
Approach Delay (s)		13.2			16.3			6.3			7.4	
Approach LOS		B			B			A			A	

Intersection Summary			
HCM Average Control Delay	8.7	HCM Level of Service	A
HCM Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	43.6	Sum of lost time (s)	8.0
Intersection Capacity Utilization	78.5%	ICU Level of Service	D
Analysis Period (min)	15		

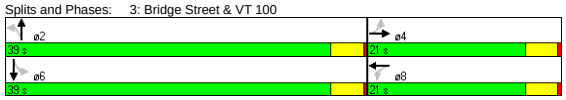
c Critical Lane Group

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Volume (vph)	4	25	96	18	3	369	79	399
Turn Type	Perm		Perm		Perm		Perm	
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phases	4	4	8	8	2	2	6	6
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0
Total Split (s)	21.0	21.0	21.0	21.0	39.0	39.0	39.0	39.0
Total Split (%)	35.0%	35.0%	35.0%	35.0%	65.0%	65.0%	65.0%	65.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	None	None	None	None	Min	Min	Min	Min
Act Effct Green (s)		12.0		12.0		37.3		37.3
Actuated g/C Ratio		0.21		0.21		0.67		0.67
v/c Ratio		0.15		0.66		0.50		0.63
Control Delay		13.0		18.2		7.7		10.6
Queue Delay		0.0		0.0		0.0		0.0
Total Delay		13.0		18.2		7.7		10.6
LOS		B		B		A		B
Approach Delay		13.1		18.2		7.7		10.6
Approach LOS		B		B		A		B

Intersection Summary

Cycle Length: 60
Actuated Cycle Length: 55.5
Natural Cycle: 60
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.66
Intersection Signal Delay: 10.5 Intersection LOS: B
Intersection Capacity Utilization 83.6% ICU Level of Service E
Analysis Period (min) 15

Splits and Phases: 3: Bridge Street & VT 100



Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	48	167	535	612
v/c Ratio	0.15	0.66	0.50	0.63
Control Delay	13.0	18.2	7.7	10.6
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	13.0	18.2	7.7	10.6
Queue Length 50th (ft)	7	27	65	92
Queue Length 95th (ft)	31	91	154	182
Internal Link Dist (ft)	2761	3431	3063	2633
Turn Bay Length (ft)				
Base Capacity (vph)	443	332	1115	1017
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.11	0.50	0.48	0.60

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	10	10	10	11	11	11	11	11	11
Total Lost time (s)		4.0			4.0			4.0			4.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frpb, ped/bikes		0.99			0.99			0.99			1.00	
Flpb, ped/bikes		1.00			1.00			1.00			1.00	
Frt		0.97			0.96			0.98			1.00	
Flt Protected		0.99			0.97			1.00			0.99	
Satd. Flow (prot)		1621			1279			1570			1615	
Flt Permitted		0.91			0.80			1.00			0.89	
Satd. Flow (perm)		1500			1046			1567			1445	
Volume (vph)	4	25	11	96	18	48	3	369	87	79	399	4
Peak-hour factor, PHF	0.33	1.00	1.00	1.00	1.00	0.90	1.00	0.83	1.00	1.00	0.76	0.50
Adj. Flow (vph)	12	25	11	96	18	53	3	445	87	79	525	8
RTOR Reduction (vph)	0	9	0	0	31	0	0	10	0	0	1	0
Lane Group Flow (vph)	0	39	0	0	136	0	0	525	0	0	611	0
Confl. Peds. (#/hr)	14		2	2		14	8		8	8		8
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	2%	2%	2%	1%	1%	1%
Bus Blockages (#/hr)	1	0	0	0	0	1	0	1	0	0	1	0
Parking (#/hr)					5							
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		10.9			10.9			36.8			36.8	
Effective Green, g (s)		10.9			10.9			36.8			36.8	
Actuated g/C Ratio		0.20			0.20			0.66			0.66	
Clearance Time (s)		4.0			4.0			4.0			4.0	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		294			205			1035			955	
v/s Ratio Prot												
v/s Ratio Perm		0.03			c0.13			0.34			c0.42	
v/c Ratio		0.13			0.66			0.51			0.64	
Uniform Delay, d1		18.5			20.7			4.8			5.6	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		0.2			7.8			0.4			1.5	
Delay (s)		18.7			28.5			5.2			7.0	
Level of Service		B			C			A			A	
Approach Delay (s)		18.7			28.5			5.2			7.0	
Approach LOS		B			C			A			A	

Intersection Summary

HCM Average Control Delay	9.4	HCM Level of Service	A
HCM Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	55.7	Sum of lost time (s)	8.0
Intersection Capacity Utilization	83.6%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Volume (vph)	2	0	55	1	3	550	82	572
Turn Type	Perm		Perm		Perm		Perm	
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phases	4	4	8	8	2	2	6	6
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0
Total Split (s)	20.0	20.0	20.0	20.0	45.0	45.0	45.0	45.0
Total Split (%)	30.8%	30.8%	30.8%	30.8%	69.2%	69.2%	69.2%	69.2%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	None	None	None	None	Min	Min	Min	Min
Act Effct Green (s)		11.6		11.6		38.1		38.1
Actuated g/C Ratio		0.20		0.20		0.66		0.66
v/c Ratio		0.03		0.79		0.75		0.85
Control Delay		15.3		20.4		13.2		19.4
Queue Delay		0.0		0.0		0.0		0.0
Total Delay		15.3		20.4		13.2		19.4
LOS		B		C		B		B
Approach Delay		15.3		20.4		13.2		19.4
Approach LOS		B		C		B		B

Intersection Summary	
Cycle Length: 65	
Actuated Cycle Length: 57.8	
Natural Cycle: 65	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.85	
Intersection Signal Delay: 16.9	Intersection LOS: B
Intersection Capacity Utilization 102.3%	ICU Level of Service G
Analysis Period (min) 15	

Splits and Phases: 3: Bridge Street & VT 100

Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	8	273	778	760
v/c Ratio	0.03	0.79	0.75	0.85
Control Delay	15.3	20.4	13.2	19.4
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	15.3	20.4	13.2	19.4
Queue Length 50th (ft)	1	40	163	183
Queue Length 95th (ft)	11	#146	230	#427
Internal Link Dist (ft)	2761	3431	3063	2633
Turn Bay Length (ft)				
Base Capacity (vph)	364	405	1063	923
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.02	0.67	0.73	0.82

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	10	10	10	11	11	11	11	11	11
Total Lost time (s)		4.0			4.0			4.0			4.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frpb, ped/bikes		0.99			0.98			1.00			1.00	
Flpb, ped/bikes		1.00			1.00			1.00			1.00	
Frt		0.93			0.91			0.99			1.00	
Flt Protected		0.98			0.98			1.00			0.99	
Satd. Flow (prot)		1537			1227			1584			1573	
Flt Permitted		0.91			0.89			0.99			0.87	
Satd. Flow (perm)		1429			1110			1568			1371	
Volume (vph)	2	0	4	55	1	170	3	550	42	82	572	5
Peak-hour factor, PHF	0.50	1.00	1.00	0.63	1.00	0.92	0.25	0.76	1.00	1.00	0.85	1.00
Adj. Flow (vph)	4	0	4	87	1	185	12	724	42	82	673	5
RTOR Reduction (vph)	0	3	0	0	123	0	0	3	0	0	0	0
Lane Group Flow (vph)	0	5	0	0	150	0	0	775	0	0	760	0
Confl. Peds. (#/hr)	3		1	1		3			2	2		
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	3%	3%	3%	4%	4%	4%
Bus Blockages (#/hr)	1	0	0	0	0	1	0	1	0	0	1	0
Parking (#/hr)					5							
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		11.6			11.6			38.1			38.1	
Effective Green, g (s)		11.6			11.6			38.1			38.1	
Actuated g/C Ratio		0.20			0.20			0.66			0.66	
Clearance Time (s)		4.0			4.0			4.0			4.0	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		287			223			1035			905	
v/s Ratio Prot												
v/s Ratio Perm		0.00			c0.14			0.49			c0.55	
v/c Ratio		0.02			0.67			0.75			0.84	
Uniform Delay, d1		18.5			21.3			6.6			7.5	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		0.0			7.7			3.0			6.9	
Delay (s)		18.5			29.0			9.6			14.4	
Level of Service		B			C			A			B	
Approach Delay (s)		18.5			29.0			9.6			14.4	
Approach LOS		B			C			A			B	

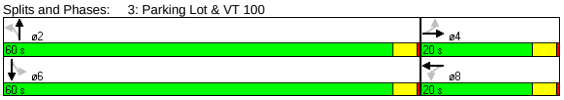
Intersection Summary			
HCM Average Control Delay	14.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	57.7	Sum of lost time (s)	8.0
Intersection Capacity Utilization	102.3%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Volume (vph)	4	25	104	18	3	558	85	602
Turn Type	Perm		Perm		Perm		Perm	
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phases	4	4	8	8	2	2	6	6
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0
Total Split (s)	20.0	20.0	20.0	20.0	60.0	60.0	60.0	60.0
Total Split (%)	25.0%	25.0%	25.0%	25.0%	75.0%	75.0%	75.0%	75.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	None	None	None	None	Min	Min	Min	Min
Act Effct Green (s)		14.2		14.2		55.3		55.3
Actuated g/C Ratio		0.18		0.18		0.71		0.71
v/c Ratio		0.17		0.84		0.68		0.87
Control Delay		22.9		48.2		10.1		20.8
Queue Delay		0.0		0.0		0.0		0.0
Total Delay		22.9		48.2		10.1		20.8
LOS		C		D		B		C
Approach Delay		22.9		48.2		10.1		20.8
Approach LOS		C		D		B		C

Intersection Summary	
Cycle Length: 80	
Actuated Cycle Length: 77.5	
Natural Cycle: 80	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.87	
Intersection Signal Delay: 19.1	Intersection LOS: B
Intersection Capacity Utilization 108.0%	ICU Level of Service G
Analysis Period (min) 15	

Splits and Phases: 3: Parking Lot & VT 100



Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	48	180	769	885
v/c Ratio	0.17	0.84	0.68	0.87
Control Delay	22.9	48.2	10.1	20.8
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	22.9	48.2	10.1	20.8
Queue Length 50th (ft)	16	75	182	293
Queue Length 95th (ft)	44	#179	250	329
Internal Link Dist (ft)	2761	3431	3063	2633
Turn Bay Length (ft)				
Base Capacity (vph)	315	234	1140	1022
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.15	0.77	0.67	0.87

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	10	10	10	11	11	11	11	11	11
Total Lost time (s)		4.0			4.0			4.0			4.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frpb, ped/bikes		0.99			0.98			1.00			1.00	
Flpb, ped/bikes		0.99			1.00			1.00			1.00	
Frt		0.97			0.96			0.98			1.00	
Flt Protected		0.99			0.97			1.00			1.00	
Satd. Flow (prot)		1619			1273			1580			1619	
Flt Permitted		0.94			0.80			1.00			0.87	
Satd. Flow (perm)		1534			1052			1577			1421	
Volume (vph)	4	25	11	104	18	52	3	558	94	85	602	4
Peak-hour factor, PHF	0.33	1.00	1.00	1.00	1.00	0.90	1.00	0.83	1.00	1.00	0.76	0.50
Adj. Flow (vph)	12	25	11	104	18	58	3	672	94	85	792	8
RTOR Reduction (vph)	0	9	0	0	22	0	0	6	0	0	0	0
Lane Group Flow (vph)	0	39	0	0	158	0	0	763	0	0	885	0
Confl. Peds. (#/hr)	14		2	2		14	8		8	8		8
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	2%	2%	2%	1%	1%	1%
Bus Blockages (#/hr)	1	0	0	0	0	1	0	1	0	0	1	0
Parking (#/hr)					5							
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		14.2			14.2			55.3			55.3	
Effective Green, g (s)		14.2			14.2			55.3			55.3	
Actuated g/C Ratio		0.18			0.18			0.71			0.71	
Clearance Time (s)		4.0			4.0			4.0			4.0	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		281			193			1125			1014	
v/s Ratio Prot												
v/s Ratio Perm		0.03			c0.15			0.48			c0.62	
v/c Ratio		0.14			0.82			0.68			0.87	
Uniform Delay, d1		26.5			30.4			6.2			8.4	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		0.2			22.9			1.6			8.4	
Delay (s)		26.8			53.3			7.8			16.8	
Level of Service		C			D			A			B	
Approach Delay (s)		26.8			53.3			7.8			16.8	
Approach LOS		C			D			A			B	

Intersection Summary			
HCM Average Control Delay	16.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	77.5	Sum of lost time (s)	8.0
Intersection Capacity Utilization	108.0%	ICU Level of Service	G
Analysis Period (min)	15		

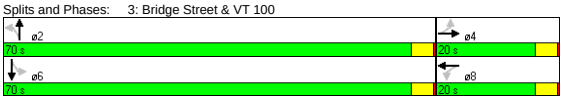
c Critical Lane Group

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Volume (vph)	2	0	68	1	3	782	101	813
Turn Type	Perm		Perm		Perm		Perm	
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phases	4	4	8	8	2	2	6	6
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0
Total Split (s)	20.0	20.0	20.0	20.0	70.0	70.0	70.0	70.0
Total Split (%)	22.2%	22.2%	22.2%	22.2%	77.8%	77.8%	77.8%	77.8%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	None	None	None	None	Min	Min	Min	Min
Act Effct Green (s)		11.8	11.8	11.8		61.3	61.3	61.3
Actuated g/C Ratio		0.15	0.15	0.15		0.75	0.75	0.75
v/c Ratio		0.04	0.62	0.73		0.92	0.34	0.85
Control Delay		24.5	41.2	19.5		22.3	7.6	16.3
Queue Delay		0.0	0.0	0.0		0.0	0.0	0.0
Total Delay		24.5	41.2	19.5		22.3	7.6	16.3
LOS		C	D	B		C	A	B
Approach Delay		24.5		26.5		22.3		15.5
Approach LOS		C		C		C		B

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 81.2
Natural Cycle: 90
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.92
Intersection Signal Delay: 20.0 Intersection LOS: B
Intersection Capacity Utilization 88.4% ICU Level of Service E
Analysis Period (min) 15

Splits and Phases: 3: Bridge Street & VT 100



Lane Group	EBT	WBL	WBT	NBT	SBL	SBT
Lane Group Flow (vph)	8	108	229	1093	101	961
v/c Ratio	0.04	0.62	0.73	0.92	0.34	0.85
Control Delay	24.5	41.2	19.5	22.3	7.6	16.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	24.5	41.2	19.5	22.3	7.6	16.3
Queue Length 50th (ft)	2	56	28	374	14	293
Queue Length 95th (ft)	14	72	#108	447	46	526
Internal Link Dist (ft)	2761		3431	3063		2633
Turn Bay Length (ft)						
Base Capacity (vph)	265	226	358	1207	301	1155
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.03	0.48	0.64	0.91	0.34	0.83

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	10	10	10	11	11	11	11	11	11
Total Lost time (s)		4.0		4.0	4.0			4.0		4.0	4.0	
Lane Util. Factor		1.00		1.00	1.00			1.00		0.95	0.95	
Frpb, ped/bikes		0.99		1.00	0.97			1.00		1.00	1.00	
Flpb, ped/bikes		1.00		1.00	1.00			1.00		1.00	1.00	
Frt		0.93		1.00	0.85			0.99		1.00	1.00	
Flt Protected		0.98		0.95	1.00			1.00		0.95	1.00	
Satd. Flow (prot)		1535		1512	1155			1586		1434	1503	
Flt Permitted		0.84		0.75	1.00			0.99		0.27	1.00	
Satd. Flow (perm)		1321		1198	1155			1569		407	1503	
Volume (vph)	2	0	4	68	1	210	3	782	52	101	813	5
Peak-hour factor, PHF	0.50	1.00	1.00	0.63	1.00	0.92	0.25	0.76	1.00	1.00	0.85	1.00
Adj. Flow (vph)	4	0	4	108	1	228	12	1029	52	101	956	5
RTOR Reduction (vph)	0	3	0	0	147	0	0	2	0	0	0	0
Lane Group Flow (vph)	0	5	0	108	82	0	0	1091	0	101	961	0
Confl. Peds. (#/hr)	3		1	1		3			2	2		
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	3%	3%	3%	4%	4%	4%
Bus Blockages (#/hr)	1	0	0	0	0	1	0	1	0	0	1	0
Parking (#/hr)					5							
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		11.8		11.8	11.8			61.3		61.3	61.3	
Effective Green, g (s)		11.8		11.8	11.8			61.3		61.3	61.3	
Actuated g/C Ratio		0.15		0.15	0.15			0.76		0.76	0.76	
Clearance Time (s)		4.0		4.0	4.0			4.0		4.0	4.0	
Vehicle Extension (s)		3.0		3.0	3.0			3.0		3.0	3.0	
Lane Grp Cap (vph)		192		174	168			1186		308	1136	
v/s Ratio Prot					0.07						0.64	
v/s Ratio Perm		0.00		c0.09				c0.70		0.25		
v/c Ratio		0.02		0.62	0.49			0.92		0.33	0.85	
Uniform Delay, d1		29.7		32.5	31.9			7.9		3.2	6.7	
Progression Factor		1.00		1.00	1.00			1.00		1.00	1.00	
Incremental Delay, d2		0.1		6.7	2.2			11.5		0.6	6.0	
Delay (s)		29.8		39.3	34.1			19.5		3.8	12.7	
Level of Service		C		D	C			B		A	B	
Approach Delay (s)		29.8			35.8			19.5			11.8	
Approach LOS		C			D			B			B	

Intersection Summary

HCM Average Control Delay	18.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	81.1	Sum of lost time (s)	8.0
Intersection Capacity Utilization	88.4%	ICU Level of Service	E
Analysis Period (min)	15		

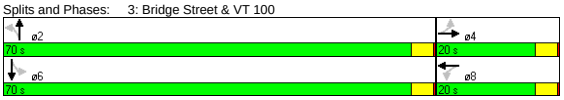
c Critical Lane Group

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Volume (vph)	4	25	128	18	3	792	105	855
Turn Type	Perm		Perm		Perm		Perm	
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phases	4	4	8	8	2	2	6	6
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0
Total Split (s)	20.0	20.0	20.0	20.0	70.0	70.0	70.0	70.0
Total Split (%)	22.2%	22.2%	22.2%	22.2%	77.8%	77.8%	77.8%	77.8%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	None	None	None	None	Min	Min	Min	Min
Act Effct Green (s)		13.2	13.2	13.2		71.5	71.5	71.5
Actuated g/C Ratio		0.14	0.14	0.14		0.77	0.77	0.77
v/c Ratio		0.21	0.70	0.39		0.88	0.32	0.90
Control Delay		27.9	46.0	15.4		19.2	6.8	21.6
Queue Delay		0.0	0.0	0.0		0.0	0.0	0.0
Total Delay		27.9	46.0	15.4		19.2	6.8	21.6
LOS		C	D	B		B	A	C
Approach Delay		27.9		33.5		19.2		20.3
Approach LOS		C		C		B		C

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 92.7
Natural Cycle: 90
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.90
Intersection Signal Delay: 21.1 Intersection LOS: C
Intersection Capacity Utilization 113.6% ICU Level of Service H
Analysis Period (min) 15

Splits and Phases: 3: Bridge Street & VT 100



Lane Group	EBT	WBL	WBT	NBT	SBL	SBT
Lane Group Flow (vph)	48	128	89	1073	105	1133
v/c Ratio	0.21	0.70	0.39	0.88	0.32	0.90
Control Delay	27.9	46.0	15.4	19.2	6.8	21.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	27.9	46.0	15.4	19.2	6.8	21.6
Queue Length 50th (ft)	18	67	9	362	15	413
Queue Length 95th (ft)	49	126	50	#587	43	458
Internal Link Dist (ft)	2761		3431	3063		2633
Turn Bay Length (ft)						
Base Capacity (vph)	266	217	256	1223	333	1256
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.18	0.59	0.35	0.88	0.32	0.90

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	10	10	10	11	11	11	11	11	11
Total Lost time (s)		4.0		4.0	4.0			4.0		4.0	4.0	
Lane Util. Factor		1.00		1.00	1.00			1.00		1.00	1.00	
Frpb, ped/bikes		0.99		1.00	0.95			1.00		1.00	1.00	
Flpb, ped/bikes		0.99		0.99	1.00			1.00		1.00	1.00	
Frt		0.97		1.00	0.88			0.99		1.00	1.00	
Flt Protected		0.99		0.95	1.00			1.00		0.95	1.00	
Satd. Flow (prot)		1612		1508	1171			1583		1549	1628	
Flt Permitted		0.93		0.82	1.00			1.00		0.27	1.00	
Satd. Flow (perm)		1514		1294	1171			1580		447	1628	
Volume (vph)	4	25	11	128	18	64	3	792	116	105	855	4
Peak-hour factor, PHF	0.33	1.00	1.00	1.00	1.00	0.90	1.00	0.83	1.00	1.00	0.76	0.50
Adj. Flow (vph)	12	25	11	128	18	71	3	954	116	105	1125	8
RTOR Reduction (vph)	0	9	0	0	61	0	0	4	0	0	0	0
Lane Group Flow (vph)	0	39	0	128	28	0	0	1069	0	105	1133	0
Confl. Peds. (#/hr)	14		2	2		14	8		8	8		8
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	2%	2%	2%	1%	1%	1%
Bus Blockages (#/hr)	1	0	0	0	0	1	0	1	0	0	1	0
Parking (#/hr)					5							
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		13.2		13.2	13.2			71.5		71.5	71.5	
Effective Green, g (s)		13.2		13.2	13.2			71.5		71.5	71.5	
Actuated g/C Ratio		0.14		0.14	0.14			0.77		0.77	0.77	
Clearance Time (s)		4.0		4.0	4.0			4.0		4.0	4.0	
Vehicle Extension (s)		3.0		3.0	3.0			3.0		3.0	3.0	
Lane Grp Cap (vph)		216		184	167			1219		345	1256	
v/s Ratio Prot					0.02						c0.70	
v/s Ratio Perm		0.03		c0.10				0.68		0.24		
v/c Ratio		0.18		0.70	0.17			0.88		0.30	0.90	
Uniform Delay, d1		35.0		37.8	34.9			7.5		3.2	8.0	
Progression Factor		1.00		1.00	1.00			1.00		1.00	1.00	
Incremental Delay, d2		0.4		10.9	0.5			7.4		0.5	9.2	
Delay (s)		35.4		48.7	35.4			14.8		3.7	17.1	
Level of Service		D		D	D			B		A	B	
Approach Delay (s)		35.4			43.2			14.8			16.0	
Approach LOS		D			D			B			B	

Intersection Summary

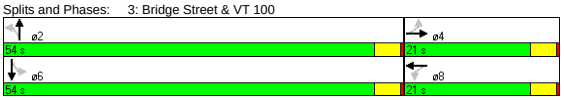
HCM Average Control Delay	18.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	92.7	Sum of lost time (s)	8.0
Intersection Capacity Utilization	113.6%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Volume (vph)	42	0	55	1	22	531	82	540
Turn Type	Perm		Perm		Perm		Perm	
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phases	4	4	8	8	2	2	6	6
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0
Total Split (s)	21.0	21.0	21.0	21.0	54.0	54.0	54.0	54.0
Total Split (%)	28.0%	28.0%	28.0%	28.0%	72.0%	72.0%	72.0%	72.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	None	None	None	None	Min	Min	Min	Min
Act Effct Green (s)		13.4		13.4		44.6		44.6
Actuated g/C Ratio		0.20		0.20		0.67		0.67
v/c Ratio		0.57		0.84		0.89		0.80
Control Delay		27.8		29.2		21.7		16.2
Queue Delay		0.0		0.0		0.0		0.0
Total Delay		27.8		29.2		21.7		16.2
LOS		C		C		C		B
Approach Delay		27.8		29.2		21.7		16.2
Approach LOS		C		C		C		B

Intersection Summary	
Cycle Length: 75	
Actuated Cycle Length: 66.3	
Natural Cycle: 75	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.89	
Intersection Signal Delay: 21.1	Intersection LOS: C
Intersection Capacity Utilization 93.5%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 3: Bridge Street & VT 100



Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	119	273	829	722
v/c Ratio	0.57	0.84	0.89	0.80
Control Delay	27.8	29.2	21.7	16.2
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	27.8	29.2	21.7	16.2
Queue Length 50th (ft)	37	62	271	207
Queue Length 95th (ft)	90	#188	318	333
Internal Link Dist (ft)	2761	3431	3063	2633
Turn Bay Length (ft)				
Base Capacity (vph)	247	366	966	936
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.48	0.75	0.86	0.77

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	10	10	10	11	11	11	11	11	11
Total Lost time (s)		4.0			4.0			4.0			4.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frpb, ped/bikes		0.99			0.98			1.00			1.00	
Flpb, ped/bikes		1.00			1.00			1.00			1.00	
Frt		0.96			0.91			0.99			1.00	
Flt Protected		0.97			0.98			0.99			0.99	
Satd. Flow (prot)		1573			1226			1577			1572	
Flt Permitted		0.54			0.87			0.87			0.85	
Satd. Flow (perm)		872			1087			1383			1344	
Volume (vph)	42	0	35	55	1	170	22	531	42	82	540	5
Peak-hour factor, PHF	0.50	1.00	1.00	0.63	1.00	0.92	0.25	0.76	1.00	1.00	0.85	1.00
Adj. Flow (vph)	84	0	35	87	1	185	88	699	42	82	635	5
RTOR Reduction (vph)	0	21	0	0	104	0	0	3	0	0	0	0
Lane Group Flow (vph)	0	98	0	0	169	0	0	826	0	0	722	0
Confl. Peds. (#/hr)	3		1	1		3			2	2		
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	3%	3%	3%	4%	4%	4%
Bus Blockages (#/hr)	1	0	0	0	0	1	0	1	0	0	1	0
Parking (#/hr)					5							
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		13.4			13.4			44.6			44.6	
Effective Green, g (s)		13.4			13.4			44.6			44.6	
Actuated g/C Ratio		0.20			0.20			0.68			0.68	
Clearance Time (s)		4.0			4.0			4.0			4.0	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		177			221			935			908	
v/s Ratio Prot												
v/s Ratio Perm		0.11			c0.16			c0.60			0.54	
v/c Ratio		0.56			0.77			0.88			0.79	
Uniform Delay, d1		23.6			24.8			8.6			7.5	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		3.7			14.6			9.9			4.9	
Delay (s)		27.4			39.5			18.6			12.4	
Level of Service		C			D			B			B	
Approach Delay (s)		27.4			39.5			18.6			12.4	
Approach LOS		C			D			B			B	

Intersection Summary			
HCM Average Control Delay	19.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	66.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	93.5%	ICU Level of Service	F
Analysis Period (min)	15		

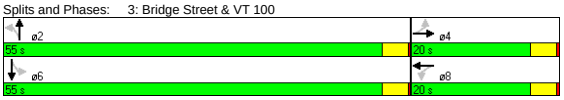
c Critical Lane Group

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Volume (vph)	44	25	104	18	22	538	85	576
Turn Type	Perm		Perm		Perm		Perm	
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phases	4	4	8	8	2	2	6	6
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0
Total Split (s)	20.0	20.0	20.0	20.0	55.0	55.0	55.0	55.0
Total Split (%)	26.7%	26.7%	26.7%	26.7%	73.3%	73.3%	73.3%	73.3%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	None	None	None	None	Min	Min	Min	Min
Act Effct Green (s)		13.7		13.7		45.9		45.9
Actuated g/C Ratio		0.20		0.20		0.68		0.68
v/c Ratio		0.81		0.81		0.73		0.89
Control Delay		41.9		41.6		11.7		20.8
Queue Delay		0.0		0.0		0.0		0.0
Total Delay		41.9		41.6		11.7		20.8
LOS		D		D		B		C
Approach Delay		41.9		41.6		11.7		20.8
Approach LOS		D		D		B		C

Intersection Summary

Cycle Length: 75
Actuated Cycle Length: 67.8
Natural Cycle: 75
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.89
Intersection Signal Delay: 21.3 Intersection LOS: C
Intersection Capacity Utilization 99.9% ICU Level of Service F
Analysis Period (min) 15

Splits and Phases: 3: Bridge Street & VT 100



Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	195	180	764	851
v/c Ratio	0.81	0.81	0.73	0.89
Control Delay	41.9	41.6	11.7	20.8
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	41.9	41.6	11.7	20.8
Queue Length 50th (ft)	80	67	184	267
Queue Length 95th (ft)	#186	#171	262	308
Internal Link Dist (ft)	2761	3431	3063	2633
Turn Bay Length (ft)				
Base Capacity (vph)	273	250	1080	993
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.71	0.72	0.71	0.86

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	10	10	10	11	11	11	11	11	11
Total Lost time (s)		4.0			4.0			4.0			4.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frpb, ped/bikes		1.00			0.98			1.00			1.00	
Flpb, ped/bikes		0.99			1.00			1.00			1.00	
Frt		0.97			0.96			0.98			1.00	
Flt Protected		0.97			0.97			1.00			1.00	
Satd. Flow (prot)		1583			1276			1578			1619	
Flt Permitted		0.70			0.76			0.97			0.87	
Satd. Flow (perm)		1144			992			1534			1420	
Volume (vph)	44	25	37	104	18	52	22	538	94	85	576	4
Peak-hour factor, PHF	0.33	1.00	1.00	1.00	1.00	0.90	1.00	0.83	1.00	1.00	0.76	0.50
Adj. Flow (vph)	133	25	37	104	18	58	22	648	94	85	758	8
RTOR Reduction (vph)	0	11	0	0	23	0	0	7	0	0	0	0
Lane Group Flow (vph)	0	184	0	0	157	0	0	757	0	0	851	0
Confl. Peds. (#/hr)	14		2	2		14	8		8	8		8
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	2%	2%	2%	1%	1%	1%
Bus Blockages (#/hr)	1	0	0	0	0	1	0	1	0	0	1	0
Parking (#/hr)					5							
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		13.7			13.7			45.9			45.9	
Effective Green, g (s)		13.7			13.7			45.9			45.9	
Actuated g/C Ratio		0.20			0.20			0.68			0.68	
Clearance Time (s)		4.0			4.0			4.0			4.0	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		232			201			1042			964	
v/s Ratio Prot												
v/s Ratio Perm		c0.16			0.16			0.49			c0.60	
v/c Ratio		0.79			0.78			0.73			0.88	
Uniform Delay, d1		25.6			25.5			6.9			8.7	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		16.7			17.6			2.6			9.6	
Delay (s)		42.3			43.1			9.4			18.3	
Level of Service		D			D			A			B	
Approach Delay (s)		42.3			43.1			9.4			18.3	
Approach LOS		D			D			A			B	

Intersection Summary

HCM Average Control Delay	19.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	67.6	Sum of lost time (s)	8.0
Intersection Capacity Utilization	99.9%	ICU Level of Service	F
Analysis Period (min)	15		

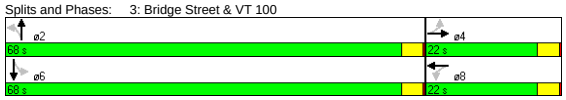
c Critical Lane Group

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Volume (vph)	42	0	68	1	22	763	101	782
Turn Type	Perm		Perm		Perm		Perm	
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phases	4	4	8	8	2	2	6	6
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0
Total Split (s)	22.0	22.0	22.0	22.0	68.0	68.0	68.0	68.0
Total Split (%)	24.4%	24.4%	24.4%	24.4%	75.6%	75.6%	75.6%	75.6%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	None	None	None	None	Min	Min	Min	Min
Act Effct Green (s)		14.4	14.4	14.4	58.2	58.2	58.2	58.2
Actuated g/C Ratio		0.18	0.18	0.18	0.72	0.72	0.72	0.72
v/c Ratio		0.81	0.55	0.66	0.37	0.92	0.64	0.81
Control Delay		49.9	38.3	17.4	10.2	23.2	28.2	15.0
Queue Delay		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		49.9	38.3	17.4	10.2	23.2	28.2	15.0
LOS		D	D	B	B	C	C	B
Approach Delay		49.9		24.1		22.2		16.3
Approach LOS		D		C		C		B

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 80.8
Natural Cycle: 90
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.92
Intersection Signal Delay: 21.4 Intersection LOS: C
Intersection Capacity Utilization 87.8% ICU Level of Service E
Analysis Period (min) 15

Splits and Phases: 3: Bridge Street & VT 100



Lane Group	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	119	108	229	88	1056	101	925
v/c Ratio	0.81	0.55	0.66	0.37	0.92	0.64	0.81
Control Delay	49.9	38.3	17.4	10.2	23.2	28.2	15.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	49.9	38.3	17.4	10.2	23.2	28.2	15.0
Queue Length 50th (ft)	53	55	29	17	436	26	310
Queue Length 95th (ft)	#143	71	106	8	440	#127	441
Internal Link Dist (ft)	2761		3431		3063		2633
Turn Bay Length (ft)							
Base Capacity (vph)	174	240	383	244	1174	163	1170
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.68	0.45	0.60	0.36	0.90	0.62	0.79

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	10	10	10	11	11	11	11	11	11
Total Lost time (s)		4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes		0.99		1.00	0.97		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt		0.96		1.00	0.85		1.00	0.99		1.00	1.00	
Flt Protected		0.97		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1571		1513	1156		1525	1585		1510	1582	
Flt Permitted		0.40		0.70	1.00		0.21	1.00		0.15	1.00	
Satd. Flow (perm)		647		1121	1156		343	1585		237	1582	
Volume (vph)	42	0	35	68	1	210	22	763	52	101	782	5
Peak-hour factor, PHF	0.50	1.00	1.00	0.63	1.00	0.92	0.25	0.76	1.00	1.00	0.85	1.00
Adj. Flow (vph)	84	0	35	108	1	228	88	1004	52	101	920	5
RTOR Reduction (vph)	0	17	0	0	140	0	0	2	0	0	0	0
Lane Group Flow (vph)	0	102	0	108	89	0	88	1054	0	101	925	0
Confl. Peds. (#/hr)	3		1	1		3			2	2		
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	3%	3%	3%	4%	4%	4%
Bus Blockages (#/hr)	1	0	0	0	0	1	0	1	0	0	1	0
Parking (#/hr)					5							
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		14.4		14.4	14.4		58.2	58.2		58.2	58.2	
Effective Green, g (s)		14.4		14.4	14.4		58.2	58.2		58.2	58.2	
Actuated g/C Ratio		0.18		0.18	0.18		0.72	0.72		0.72	0.72	
Clearance Time (s)		4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)		3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		116		200	207		248	1145		171	1142	
v/s Ratio Prot					0.08			c0.67			0.58	
v/s Ratio Perm		c0.16		0.10			0.26			0.43		
v/c Ratio		0.88		0.54	0.43		0.35	0.92		0.59	0.81	
Uniform Delay, d1		32.2		30.1	29.5		4.2	9.3		5.4	7.5	
Progression Factor		1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		47.3		3.0	1.4		0.9	11.9		5.4	4.3	
Delay (s)		79.5		33.0	30.9		5.1	21.2		10.8	11.8	
Level of Service		E		C	C		A	C		B	B	
Approach Delay (s)		79.5			31.6			20.0			11.7	
Approach LOS		E			C			B			B	

Intersection Summary

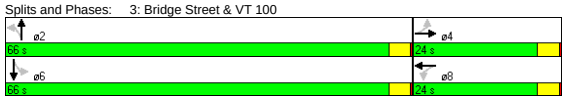
HCM Average Control Delay	20.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	80.6	Sum of lost time (s)	8.0
Intersection Capacity Utilization	87.8%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Volume (vph)	44	25	128	18	22	772	105	829
Turn Type	Perm		Perm		Perm		Perm	
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phases	4	4	8	8	2	2	6	6
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0
Total Split (s)	24.0	24.0	24.0	24.0	66.0	66.0	66.0	66.0
Total Split (%)	26.7%	26.7%	26.7%	26.7%	73.3%	73.3%	73.3%	73.3%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	None	None	None	None	Min	Min	Min	Min
Act Effct Green (s)		17.1	17.1	17.1		63.9	63.9	63.9
Actuated g/C Ratio		0.19	0.19	0.19		0.72	0.72	0.72
v/c Ratio		0.81	0.64	0.32		1.13	0.35	0.94
Control Delay		47.5	42.3	12.9		90.2	9.5	29.3
Queue Delay		0.0	0.0	0.0		0.0	0.0	0.0
Total Delay		47.5	42.3	12.9		90.2	9.5	29.3
LOS		D	D	B		F	A	C
Approach Delay		47.5		30.3		90.2		27.6
Approach LOS		D		C		F		C

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 89	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.13	
Intersection Signal Delay: 54.2	Intersection LOS: D
Intersection Capacity Utilization 94.3%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 3: Bridge Street & VT 100



Lane Group	EBT	WBL	WBT	NBT	SBL	SBT
Lane Group Flow (vph)	195	128	89	1068	105	1099
v/c Ratio	0.81	0.64	0.32	1.13	0.35	0.94
Control Delay	47.5	42.3	12.9	90.2	9.5	29.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	47.5	42.3	12.9	90.2	9.5	29.3
Queue Length 50th (ft)	97	65	8	~728	21	503
Queue Length 95th (ft)	#196	125	47	#861	54	514
Internal Link Dist (ft)	2761		3431	3063		2633
Turn Bay Length (ft)						
Base Capacity (vph)	271	228	310	943	299	1169
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.72	0.56	0.29	1.13	0.35	0.94

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	10	10	10	11	11	11	11	11	11
Total Lost time (s)		4.0		4.0	4.0			4.0		4.0	4.0	
Lane Util. Factor		1.00		1.00	1.00			1.00		1.00	1.00	
Frpb, ped/bikes		1.00		1.00	0.95			1.00		1.00	1.00	
Flpb, ped/bikes		0.98		1.00	1.00			1.00		1.00	1.00	
Frt		0.97		1.00	0.88			0.99		1.00	1.00	
Flt Protected		0.97		0.95	1.00			1.00		0.95	1.00	
Satd. Flow (prot)		1566		1512	1172			1582		1550	1628	
Flt Permitted		0.74		0.66	1.00			0.91		0.26	1.00	
Satd. Flow (perm)		1200		1053	1172			1447		431	1628	
Volume (vph)	44	25	37	128	18	64	22	772	116	105	829	4
Peak-hour factor, PHF	0.33	1.00	1.00	1.00	1.00	0.90	1.00	0.83	1.00	1.00	0.76	0.50
Adj. Flow (vph)	133	25	37	128	18	71	22	930	116	105	1091	8
RTOR Reduction (vph)	0	10	0	0	57	0	0	5	0	0	0	0
Lane Group Flow (vph)	0	185	0	128	32	0	0	1063	0	105	1099	0
Confl. Peds. (#/hr)	14		2	2		14	8		8	8		8
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	2%	2%	2%	1%	1%	1%
Bus Blockages (#/hr)	1	0	0	0	0	1	0	1	0	0	1	0
Parking (#/hr)					5							
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		17.1		17.1	17.1			63.9		63.9	63.9	
Effective Green, g (s)		17.1		17.1	17.1			63.9		63.9	63.9	
Actuated g/C Ratio		0.19		0.19	0.19			0.72		0.72	0.72	
Clearance Time (s)		4.0		4.0	4.0			4.0		4.0	4.0	
Vehicle Extension (s)		3.0		3.0	3.0			3.0		3.0	3.0	
Lane Grp Cap (vph)		231		202	225			1039		309	1169	
v/s Ratio Prot					0.03						0.67	
v/s Ratio Perm		c0.15		0.12				c0.74		0.24		
v/c Ratio		0.80		0.63	0.14			1.02		0.34	0.94	
Uniform Delay, d1		34.3		33.1	29.8			12.6		4.7	10.9	
Progression Factor		1.00		1.00	1.00			1.00		1.00	1.00	
Incremental Delay, d2		17.9		6.4	0.3			34.0		0.7	14.1	
Delay (s)		52.2		39.4	30.1			46.6		5.3	24.9	
Level of Service		D		D	C			D		A	C	
Approach Delay (s)		52.2			35.6			46.6			23.2	
Approach LOS		D			D			D			C	

Intersection Summary			
HCM Average Control Delay	35.6	HCM Level of Service	D
HCM Volume to Capacity ratio	0.98		
Actuated Cycle Length (s)	89.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	94.3%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

APPENDIX E

Cross-walk Guideline Assessment

In order to determine whether the crosswalks identified in the study satisfy the VTrans approval guidelines, a set of screening criteria was applied to each crosswalk location. The crosswalk screening is based on the criteria presented in the *Guideline for the Installation of Crosswalk Markings and Pedestrian Signs at Marked and Unmarked Crossings* (VTrans, 2004). Screening elements are shown below for crosswalks at 1) a stop-controlled intersection approach, 2) an uncontrolled intersection approach, and 3) a mid-block crosswalk.

STOP CONTROLLED APPROACH[1]

- A crosswalk may be placed across an approach controlled by a stop sign if a sidewalk exists on both sides of the roadway approach controlled by a stop sign.

UNCONTROLLED APPROACH MARKED CROSSING[2]

- The speed limit is 40 mph or less.
- There are 20 or more pedestrians using the crossing per hour during the vehicular A.M. and P.M. peak periods (lesser volumes may be considered if a large percentage of the pedestrian population consists of young, elderly, or disabled pedestrians).[3]
- The AADT (annual average daily traffic) for the roadway exceeds 3000 vehicles per day,
- A sidewalk or adequate shoulder for use by pedestrians exists on both sides of the roadway approach.
- There is not another crosswalk across the same roadway within 60 m (200 ft) of the intersection.
- Adequate sight distance (equal to or exceeding the stopping sight distance for the posted speed) is available in both directions. At a minimum, a driver must be able to see either the crosswalk or the pedestrian warning sign. It is recommended that sight distance be measured from the driver's perspective to the outer edges of the traveled lanes, to ensure that an approaching driver can see a pedestrian at any point on the crosswalk within the traveled way.

MID-BLOCK CROSSINGS[4]

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[1] Guideline for the Installation of Crosswalk Markings and Pedestrian Signs at Marked and Unmarked Crossings, VTrans, 2004.

[2] Ibid.

[3] Discussions with various VTrans officials have revealed that documenting the relative demand for a crosswalk within a community is more important than meeting the pedestrian volume warrant.

[4] Ibid.

- The speed limit is 40 mph or less.
- There are 20 or more pedestrians using the crossing per hour during the vehicular A.M. and P.M. peak periods (lesser volumes may be considered if a large percentage of the pedestrian population consists of young, elderly, or disabled pedestrians).[1]
- The AADT (annual average daily traffic) for the roadway exceeds 3000 vehicles per day,
- A sidewalk or adequate shoulder for use by pedestrians (or other pedestrian destination, such as a recreation field, where there is low potential for vehicle/pedestrian conflicts) exists on both sides of the roadway.
- There is not another crosswalk across the same roadway within 60 m (200 ft) of the intersection.
- Adequate sight distance (equal to or exceeding the stopping sight distance for the posted speed) is available in both directions. At a minimum, a driver must be able to see either the crosswalk or the pedestrian warning sign. It is recommended that sight distance be measured from the driver's perspective to the outer edges of the traveled lanes, to ensure that an approaching driver can see a pedestrian at any point on the crosswalk within the traveled way.
- A determination has been made that the pedestrian shall have the right of way over the vehicular traffic.

The crosswalk screening elements shown for stop-controlled, uncontrolled, and mid-block crossings were applied to the four identified crosswalk locations to determine whether they meet the identified warrants. Table 1 shows the results of the pedestrian crossing screening for each of the four locations.

Discussions with VTrans officials have revealed that documenting the relative demand for a crosswalk within a community is more important than meeting the specific pedestrian volume warrant. Therefore, Table 1 identifies major origins and destinations rather than specific estimates for the number of crossing pedestrians.

[1] Discussions with various VTrans officials have revealed that documenting the relative demand for a crosswalk within a community is more important than meeting the pedestrian volume warrant.

Table 1: Warrant Assessment for New Crosswalk Locations

Location	Type of Crossing	Sidewalk or Adequate Shoulder on Both Sides?	Speed Limit <40 mph	AADT > 3000	No Cross-walk within 200 ft	Adequate Sight Distance	Major Locations Served
Southern Gateway at Tree Forms	Mid-Block	With construction of VT 100 Transportation Path and southern segment of the VT 100 west sidewalk recommended in this plan	Yes	Yes	No - Approximately 150 feet from the Bridge Street intersection	Yes	Bridge Street Marketplace
Across VT 100 Approaches to Bridge Street	Short-term: Uncontrolled Approach; Long-term: Signalized	Yes under existing conditions and will be enhanced with construction of VT 100 west sidewalk.	Yes	Yes	Yes	Yes	Businesses on Bridge Street, Mad River Lodge, Farr Municipal Lot
Bridge Street at VT Transportation Path Crossing	Mid-Block	Yes	Yes	Yes	Yes	Yes	Businesses along Bridge St, part of VT 100 Path, Bridge Street Marketplace Lot
Town Park to Village Grocery	Mid-Block	Yes under existing conditions and will be enhanced with construction of VT 100 west sidewalk.	Yes	Yes	Approximately 190 feet from Bridge Street intersection	Yes	Village Grocery to east-side on-street parking
Valley Players Theatre	Mid-Block	Yes under existing conditions and will be enhanced with construction of VT 100 west sidewalk.	Yes	Yes	Yes	Yes	Valley Players Theatre and east-side on-street parking
Old County Road	Mid-Block	Yes under existing conditions and will be enhanced with construction of VT 100 west sidewalk.	Yes	Yes	Yes	Yes	Health center to VT 100 transportation path

The guideline assessment for new crosswalk locations shown in Table 1 reveals the following:

- Southern Gateway: This cross-walk does not satisfy the 200-ft separation guideline from another cross-walk. Options include eliminating the southern most cross-walk VT 100's southern approach to Bridge Street/Farr Lane or locating this sidewalk further to the south, possibly neat the entrance to Bridge Street Marketplace.
- Across the VT 100 Approaches to Bridge Street/Farr Lane: As noted above, the cross-walk over the southern approach may need to be eliminated because it is too close to the proposed mid-block crossing at the southern gateway. The cross-walk on the VT 100 northern approach satisfies the all of the guidelines.
- Relocated Bridge Street Crossing. All of the guidelines are satisfied.
- Town Park to Village Grocery: The cross-walk may need to be located 10-20 feet further north to provide the 200 foot separation distance recommended in the guidelines.
- Valley Players Theatre: All of the guidelines are satisfied.
- Old County Road. All of the guidelines are satisfied.

In addition to the locations listed in the table above, a cross-walk is also recommended across Farr Lane as part of the west sidewalk project. The cross-walk will be at a stop controlled approach in the short-term and a signalized intersection in the long-term and therefore satisfies the guidelines.

APPENDIX F

Cost Estimate Worksheets

Project 1A: Bulbouts and Cross-walk at VT 100-Bridge Street-Farr Lane

Item	Quantity	Units	Unit Cost	Total / Subtotal	Notes
General Conditions					
Mobilize	1.0	LS	$ 1,500	$ 1,500	
Traffic Control and Temp Signage	1.0	LS	$ 1,000	$ 1,000	
Excavation/Demolition					
Excavate Pavements & Surfaces	206	CY	$ 13	$ 2,582	VTRans 203.28
Cold mill pavement	1053.3	SY	$ 1	$ 480	VTRans 203.28
Subbase Crush Gravel (Coarse Graded)	103	CY	$ 19	$ 1,941	VTrans 301.25
Finegrade sub grade	308.3	SY	$ 1	$ 182	VTRans 203.40
Roadway and Sidewalks					
2 " Bit. Concrete Pavement Overaly	114	Tons	$ 51	$ 5,839	VTrans 406.25
Vertical Granite Curbs	270	lf	$ 30	$ 8,100	VTrans 616.20 (published at $26.12/lf - rounded to $30 due to complexity of bulbouts
Pre-Cast Concrete Pavers	2775	sf	$ 3	$ 9,629	http://www.get-a-quote.net/QuoteEngine/costbook.asp?WCI=CostFrameSet&BookId=65
Signs	4	Each	$ 127	$ 508	http://www.get-a-quote.net/QuoteEngine/costbook.asp?WCI=CostFrameSet&BookId=65
Rehab Catch Basins	2	Each	$ 1,151	$ 2,302	Vtrans 604.418
24" Stop Bar	80	lf	$ 14	$ 1,115	VTrans 646.26
Stop sign and Post	2	Each	$ 170	$ 340	http://www.get-a-quote.net/QuoteEngine/costbook.asp?WCI=CostFrameSet&BookId=65
Durable Cross Walk with Diagonal Lines	140	LF	$ 10	$ 1,408	VTrans 680.25 (Asumes gateway sign is as complex as a business info sign)
Durable White Line	600.0	lf	$ 1	$ 306	VTrans 646.40
Durable 4" Yellow Line	300	lf	$ 1	$ 153	VTrans 646.41

Sub-Total	$	37,386
Engineering 15%	$	5,608
Contingency 100%	$	37,386
Total Estimate	$	80,381
Right-of-Way Allowance	$	-
Rounding	$	81,000

Project 1B: Bulbouts and Cross-walk at VT 100-Bridge Street-Farr Lane with Plaza in Front of Mad River Lodge

Item	Quantity	Units	Unit Cost	Total / Subtotal	Notes
General Conditions					
Mobilize	1.0	LS	$ 1,500	$ 1,500	
Traffic Control and Temp Signage	1.0	LS	$ 1,000	$ 1,000	
Excavation/Demolition					
Excavate Pavements & Surfaces	287	CY	$ 13	$ 3,605	VTRans 203.28
Cold mill pavement	1275.6	SY	$ 1	$ 480	VTRans 203.28
Subbase Crush Gravel (Coarse Graded)	144	CY	$ 19	$ 2,711	VTrans 301.25
Finegrade sub grade	430.6	SY	$ 1	$ 254	VTRans 203.40
Roadway and Sidewalks					
2 " Bit. Concrete Pavement Overaly	138	Tons	$ 51	$ 7,071	VTrans 406.25
Vertical Granite Curbs	320	lf	$ 30	$ 9,600	VTrans 616.20 (published at $26.12/lf - rounded to $30 due to complexity of bulbouts
Pre-Cast Concrete Pavers	3875	sf	$ 3	$ 13,446	http://www.get-a-quote.net/QuoteEngine/costbook.asp?WCI=CostFrameSet&BookId=65
Signs	4	Each	$ 127	$ 508	http://www.get-a-quote.net/QuoteEngine/costbook.asp?WCI=CostFrameSet&BookId=65
Rehab Catch Basins	2	Each	$ 1,151	$ 2,302	Vtrans 604.418
24" Stop Bar	80	lf	$ 14	$ 1,115	VTrans 646.26
Stop sign and Post	2	Each	$ 170	$ 340	http://www.get-a-quote.net/QuoteEngine/costbook.asp?WCI=CostFrameSet&BookId=65
Durable Cross Walk with Diagonal Lines	140	LF	$ 10	$ 1,408	VTrans 680.25 (Asumes gateway sign is as complex as a business info sign)
Durable White Line	600.0	lf	$ 1	$ 306	VTrans 646.40
Durable 4" Yellow Line	300	lf	$ 1	$ 153	VTrans 646.41

Sub-Total	$	45,800
Engineering 15%	$	6,870
Contingency 100%	$	45,800
Total Estimate	$	98,471
Right-of-Way Allowance	$	-
Rounding	$	99,000

Project 2: Bulbouts and Cross-walk at VT 100-Bridge Street-Farr Lane and Traffic Signal

Item	Quantity	Units	Unit Cost	Total / Subtotal	Notes
General Conditions					
Mobilize	1.0	LS	$ 1,500	$ 1,500	
Traffic Control and Temp Signage	1.0	LS	$ 1,000	$ 1,000	
Excavation/Demolition					
Excavate Pavements & Surfaces	206	CY	$ 13	$ 2,582	VTRans 203.28
Cold mill pavement	1053.3	SY	$ 1	$ 480	VTRans 203.28
Subbase Crush Gravel (Coarse Graded)	103	CY	$ 19	$ 1,941	VTrans 301.25
Finegrade sub grade	308.3	SY	$ 1	$ 182	VTRans 203.40
Roadway and Sidewalks					
2 " Bit. Concrete Pavement Overaly	114	Tons	$ 51	$ 5,839	VTrans 406.25
Vertical Granit Curbs	270	lf	$ 30	$ 8,100	VTrans 616.20 (published at $26.12/lf - rounded to $30 due to complexity of bulbouts
Pre-Cast Concrete Pavers	2775	sf	$ 3	$ 9,629	http://www.get-a-quote.net/QuoteEngine/costbook.asp?WCI=CostFrameSet&BookId=65
Signs	4	Each	$ 127	$ 508	http://www.get-a-quote.net/QuoteEngine/costbook.asp?WCI=CostFrameSet&BookId=65
Rehab Catch Basins	2	Each	$ 1,151	$ 2,302	Vtrans 604.418
24" Stop Bar	80	lf	$ 14	$ 1,115	VTrans 646.26
Stop sign and Post	2	Each	$ 170	$ 340	http://www.get-a-quote.net/QuoteEngine/costbook.asp?WCI=CostFrameSet&BookId=65
Durable Cross Walk with Diagonal Lines	140	LF	$ 10	$ 1,408	VTrans 680.25 (Asumes gateway sign is as complex as a business info sign)
Durable White Line	600.0	lf	$ 1	$ 306	VTrans 646.40
Durable 4" Yellow Line	300	lf	$ 1	$ 153	VTrans 646.41
Traffic Signal	1	LS	$ 90,000	$ 90,000	

	Sub-Total	$ 127,386
Engineering	15%	$ 19,108
Contingency	100%	$ 127,386
	Total Estimate	$ 273,881
	Right-of-Way Allowance	$ -
	Rounding	$ 274,000

Project 3: Sidewalks and Access Management without New Road from Tree Forms to Valley Players Theatre

	Quantity	Units	Unit Cost	Total / Subtotal	Notes
General Conditions					
Mobilize	1.0	LS	$ 2,500	$ 2,500	
Traffic Control and Temp Signage	1.0	LS	$ 2,000	$ 2,000	
Excavation/Demolition					
Excavate Pavements & Surfaces	1385	CY	$ 12.56	$ 17,398	VTRans 203.28
Subbase Crush Gravel (Coarse Graded)	1385	CY	$ 18.89	$ 26,166	VTrans 301.25
Finegrade sub grade	2077.8	SY	$ 0.59	$ 1,226	VTRans 203.40
Roadway and Sidewalks					
Bit. Concrete Pavement Overaly Patching at Edge	22	Tons	$ 51.33	$ 1,152	VTrans 406.25
Vertical Concrete Curb	935	lf	$ 30	$ 28,050	VTrans 616.20 (published at $26.12/lf - rounded to $30 due to complexity of bulbouts
Concrete Sidewalk	4675	sf	$ 2.37	$ 11,080	http://www.get-a-quote.net/QuoteEngine/costbook.asp?WCI=CostFrameSet&BookId=65
Signs	6	Each	$ 127.00	$ 762	http://www.get-a-quote.net/QuoteEngine/costbook.asp?WCI=CostFrameSet&BookId=65
Rehab Catch Basins	2	Each	$ 1,151.00	$ 2,302	Vtrans 604.418
Durable White Edge Line	935.0	lf	$ 0.51	$ 477	VTrans 646.40
Durable White Parking Lines	200.0	lf	$ 0.51	$ 102	VTrans 646.40
Landscaping - Topsoil	38	CY	$ 24.82	$ 942	VTrans 651.35
Landscaping - Seeding	4.1	MSF	$ 571.70	$ 2,344	http://www.get-a-quote.net/QuoteEngine/costbook.asp?WCI=CostFrameSet&BookId=65

Sub-Total		$ 96,501
Engineering	15%	$ 14,475
Contingency	100%	$ 96,501
Total Estimate		$ 207,476
Right-of-Way Allowance		$ -
Rounding		$ 208,000

0.874283992

Project 5: Sidewalks and Access Management with New Road from Tree Forms to Valley Players Theatre

	Quantity	Units	Unit Cost	Total / Subtotal	Notes
General Conditions					
Mobilize	1.0	LS	$ 2,500	$ 2,500	
Traffic Control and Temp Signage	1.0	LS	$ 2,000	$ 2,000	
Excavation/Demolition					
Excavate Pavements & Surfaces	1385	CY	$ 12.56	$ 17,398	VTRans 203.28
Subbase Crush Gravel (Coarse Graded)	1385	CY	$ 18.89	$ 26,166	VTrans 301.25
Finegrade sub grade	2077.8	SY	$ 0.59	$ 1,226	VTRans 203.40
Roadway and Sidewalks					
Bit. Concrete Pavement Overaly Patching at Edge	22	Tons	$ 51.33	$ 1,152	VTrans 406.25
Bi Concrete Pavement at New Parking	69	Tons	$ 51.33	$ 3,548	VTrans 406.25
Vertical Granite Curbs	935	lf	$ 30	$ 28,050	VTrans 616.20 (published at $26.12/lf - rounded to $30 due to complexity of bulbouts
Concrete Sidewalk	2600	sf	$ 2.37	$ 6,162	http://www.get-a-quote.net/QuoteEngine/costbook.asp?WCI=CostFrameSet&BookId=65
Pre-Cast Concrete Pavers	4130	sf	$ 3.47	$ 14,331	http://www.get-a-quote.net/QuoteEngine/costbook.asp?WCI=CostFrameSet&BookId=65
Signs	6	Each	$ 127.00	$ 762	http://www.get-a-quote.net/QuoteEngine/costbook.asp?WCI=CostFrameSet&BookId=65
Rehab Catch Basins	2	Each	$ 1,151.00	$ 2,302	Vtrans 604.418
Durable White Edge Line	935.0	lf	$ 0.51	$ 477	VTrans 646.40
Durable White Parking Lines	200.0	lf	$ 0.51	$ 102	VTrans 646.40
Landscaping - Topsoil	22	CY	$ 24.82	$ 557	VTrans 651.35
Landscaping - Seeding	2.425	MSF	$ 571.70	$ 1,386	http://www.get-a-quote.net/QuoteEngine/costbook.asp?WCI=CostFrameSet&BookId=65

Sub-Total		$ 108,119
Engineering	15%	$ 16,218
Contingency	100%	$ 108,119
Total Estimate		$ 232,457
Right-of-Way Allowance		$ -
Rounding		$ 233,000

0.873935375

Project 5: Sidewalks, Greenspace and Curbs - Valley Players Theatre to Old County Road

	Quantity	Units	Unit Cost	Total / Subtotal	Notes
General Conditions					
Mobilize	1.0	LS	$ 2,500	$ 2,500	
Traffic Control and Temp Signage	1.0	LS	$ 2,000	$ 2,000	
Excavation/Demolition					
Excavate Pavements & Surfaces	944	CY	$ 12.56	$ 11,862	VTRans 203.28
Subbase Crush Gravel (Coarse Graded)	944	CY	$ 18.89	$ 17,841	VTrans 301.25
Finegrade sub grade	1416.7	SY	$ 0.59	$ 836	VTRans 203.40
Remobe Fence	1	LS	$ 500.00	$ 500	Allowance
Roadway and Sidewalks					
Bit. Concrete Pavement Overaly Patching at Curb Edge	20	Tons	$ 51.33	$ 1,047	VTrans 406.25
Vertical Concrete Curbs	850	lf	$ 30	$ 25,500	VTrans 616.20 (published at $26.12/lf - rounded to $30 due to complexity of bulbouts
Concrete Sidewalk	4250	sf	$ 2.37	$ 10,073	http://www.get-a-quote.net/QuoteEngine/costbook.asp?WCI=CostFrameSet&BookId=65
Signs	6	Each	$ 127.00	$ 762	http://www.get-a-quote.net/QuoteEngine/costbook.asp?WCI=CostFrameSet&BookId=65
Durable White Edge Line	850.0	lf	$ 0.51	$ 434	VTrans 646.40
Landscaping - Topsoil	79	CY	$ 24.82	$ 1,953	VTrans 651.35
Landscaping - Seeding	8.5	MSF	$ 571.70	$ 4,859	http://www.get-a-quote.net/QuoteEngine/costbook.asp?WCI=CostFrameSet&BookId=65

Sub-Total		$ 80,167
Engineering	15%	$ 12,025
Contingency	100%	$ 80,167
Total Estimate		$ 172,358
Right-of-Way Allowance		$ -
Rounding		$ 173,000

0.87652647

Project 6: Raised Textured Cross-walk with Burlbouts

	Quantity	Units	Unit Cost	Total / Subtotal	Notes
General Conditions					
Mobilize	1.0	LS	$ 500	$ 500	
Traffic Control and Temp Signage	1.0	LS	$ 500	$ 500	
Excavation/Demolition					
Excavate Pavements & Surfaces	15	CY	$ 12.56	$ 186	VTRans 203.28
Cold mill pavement	66.7	SY	$ 1.00	$ 480	VTRans 203.28
Roadway and Sidewalks					
Textured Pavement Surface	600	sf	$ 3.47	$ 2,082	Assume colored concrete pavers
Vertical Concrete Curbs	60	lf	$ 30.00	$ 1,800	VTrans 616.20 (published at $26.12/lf - rounded to $30 due to complexity of bulbouts
Concrete Sidewalk	200	sf	$ 2.37	$ 474	http://www.get-a-quote.net/QuoteEngine/costbook.asp?WCI=CostFrameSet&BookId=65
Signs	2	Each	$ 127.00	$ 254	http://www.get-a-quote.net/QuoteEngine/costbook.asp?WCI=CostFrameSet&BookId=65
Landscaping - Topsoil	2	CY	$ 24.82	$ 46	VTrans 651.35
Landscaping - Seeding	0.2	MSF	$ 571.70	$ 114	http://www.get-a-quote.net/QuoteEngine/costbook.asp?WCI=CostFrameSet&BookId=65

Sub-Total		$ 6,436
Engineering	15%	$ 965
Contingency	100%	$ 6,436
Total Estimate		$ 13,838
Right-of-Way Allowance		$ -
Rounding		$ 14,000

0.89142323

Project 6: Painted Cross-walk with Bulbouts

	Quantity	Units	Unit Cost	Total / Subtotal	Notes
General Conditions					
Mobilize	1.0	LS	$ 500	$ 500	
Traffic Control and Temp Signage	1.0	LS	$ 500	$ 500	
Excavation/Demolition					
Excavate Pavements & Surfaces	15	CY	$ 12.56	$ 186	VTRans 203.28
Roadway and Sidewalks					
Vertical Concrete Curbs	60	lf	$ 30.00	$ 1,800	VTrans 616.20 (published at $26.12/lf - rounded to $30 due to complexity of bulbouts
Concrete Sidewalk	200	sf	$ 2.37	$ 474	http://www.get-a-quote.net/QuoteEngine/costbook.asp?WCI=CostFrameSet&BookId=65
Signs	2	Each	$ 127.00	$ 254	http://www.get-a-quote.net/QuoteEngine/costbook.asp?WCI=CostFrameSet&BookId=65
Durable Cross Walk with Diagonal Lines	30	LF	$ 10	$ 302	VTrans 680.25 (Asumes gateway sign is as complex as a business info sign)
Landscaping - Topsoil	2	CY	$ 24.82	$ 46	VTrans 651.35
Landscaping - Seeding	0.2	MSF	$ 571.70	$ 114	http://www.get-a-quote.net/QuoteEngine/costbook.asp?WCI=CostFrameSet&BookId=65

Sub-Total		$ 4,176
Engineering	15%	$ 626
Contingency	100%	$ 4,176
Total Estimate		$ 8,979
Right-of-Way Allowance		$ -
Rounding		$ 9,000

0.873983523

Project 11: New West-Side Roadway

Item	Quantity	Units	Unit Cost	Total / Subtotal	Notes
General Conditions					
Mobilize	1.0	LS	$ 3,000.00	$ 3,000	
Excavation/Demolition					
Clear and Grub	1	LS	$ 2,000.00	$ 2,000	
Common Excavation	2707	CY	$ 10.18	$ 27,561	Vtrans 203.15
Channel Excavation for Drainage	503.7037	CY	$ 12.56	$ 6,327	Vtrans 203.27
Subbase Crush Gravel (Coarse Graded)	2707	CY	$ 18.89	$ 51,143	VTrans 301.25
Finegrade sub grade	4061.1	SY	$ 0.59	$ 2,396	VTRans 203.40
Granular Backfill for Drainiage	503.7	CY	$ 15.00	$ 7,556	
Roadway and Sidewalks					
4 " Bit. Concrete Pavement new road	612	Tons	$ 51.33	$ 31,414	VTrans 406.25
Vertical Conrete Curbs	1700	lf	$ 30.00	$ 51,000	VTrans 616.20 (published at $26.12/lf - rounded to $30 due to complexity of bulbouts
Concrete Sidewalk	8500	sf	$ 2.37	$ 20,145	http://www.get-a-quote.net/QuoteEngine/costbook.asp?WCI=CostFrameSet&BookId=65
Signs	6	Each	$ 127.00	$ 762	http://www.get-a-quote.net/QuoteEngine/costbook.asp?WCI=CostFrameSet&BookId=65
Landscaping - Topsoil	142	CY	$ 24.82	$ 3,516	VTrans 651.35
Landscaping - Seeding	7.65	MSF	$ 571.70	$ 4,374	http://www.get-a-quote.net/QuoteEngine/costbook.asp?WCI=CostFrameSet&BookId=65
24" Stop Bar	48	lf	$ 13.94	$ 669	VTrans 646.26
Stop sign and Post	3	Each	$ 170.00	$ 510	http://www.get-a-quote.net/QuoteEngine/costbook.asp?WCI=CostFrameSet&BookId=65
Turn Arrows	1.0	Each	$ 50.18	$ 50	VTrans 646.5
Durable Cross Walk with Diagonal Lines	24	LF	$ 10.06	$ 241	VTrans 680.25 (Asumes gateway sign is as complex as a business info sign)
Durable White Line	1700.0	lf	$ 0.51	$ 867	VTrans 646.40
Durable 4" Yellow Line	850	lf	$ 0.51	$ 434	VTrans 646.41
Concrete Cast Basin with Iron Grate	4	Each	$ 1,350.00	$ 5,400	VTrans604.10
12 Inch Underdrain	1000	lf	$ 11.00	$ 11,000	Vtrans 605.13

		Sub-Total	$ 230,364
	Engineerin	15%	$ 34,555
	Contingency	100%	$ 230,364
		Total Estimate	$ 496,000
Right-of-Way	0.839073 Acres	100000	$ 84,000
		Tota;	$ 580,000

Project 12: Parking Lot between Fit Werz and No Wirz

Item	Quantity	Units	Unit Cost	Total / Subtotal	Notes
General Conditions					
Mobilize	1.0	LS	$ 1,000.00	$ 1,000	
Excavation/Demolition					
Clear and Grub	1	LS	$ 2,000.00	$ 2,000	
Common Excavation	148	CY	$ 10.18	$ 1,508	Vtrans 203.15
Subbase Crush Gravel (Coarse Graded)	148	CY	$ 18.89	$ 2,799	VTrans 301.25
Finegrade sub grade	222.2	SY	$ 0.59	$ 131	VTRans 203.40
Roadway and Sidewalks					
4 " Bit. Concrete Pavement	48	Tons	$ 51.33	$ 2,464	VTrans 406.25
Concrete Sidewalk	700	sf	$ 2.37	$ 1,659	http://www.get-a-quote.net/QuoteEngine/costbook.asp?WCI=CostFrameSet&BookId=65
Signs	2	Each	$ 127.00	$ 254	http://www.get-a-quote.net/QuoteEngine/costbook.asp?WCI=CostFrameSet&BookId=65
Landscaping - Topsoil	30	CY	$ 24.82	$ 735	VTrans 651.35
Landscaping - Seeding	1.6	MSF	$ 571.70	$ 915	http://www.get-a-quote.net/QuoteEngine/costbook.asp?WCI=CostFrameSet&BookId=65
24" Stop Bar	24	lf	$ 13.94	$ 335	VTrans 646.26
Stop sign and Post	1	Each	$ 170.00	$ 170	http://www.get-a-quote.net/QuoteEngine/costbook.asp?WCI=CostFrameSet&BookId=65
Durable White Line for parking Spaces	0.0	lf	$ 0.51	$ -	VTrans 646.40

		Sub-Total	$	13,969
	Engineerin	15%	$	2,095
	Contingency	100%	$	13,969
		Total Estimate	$	31,000
Right-of-Way	0.045914 Acres	100000	$	5,000
		Total Estimate	$	36,000

Project 13: Waitsfield Church Parking Lot without Bridge Street Access Road

Item	Quantity	Units	Unit Cost	Total / Subtotal	Notes
General Conditions					
Mobilize	1.0	LS	$ 1,000.00	$ 1,000	
Excavation/Demolition					
Clear and Grub	1	LS	$ 750.00	$ 750	
Common Excavation	489	CY	$ 10.18	$ 4,977	Vtrans 203.15
Subbase Crush Gravel (Coarse Graded)	489	CY	$ 18.89	$ 9,235	VTrans 301.25
Finegrade sub grade	1213.3	SY	$ 0.59	$ 716	VTRans 203.40
Roadway and Prking Lot					
4 " Bit. Concrete Pavement	262	Tons	$ 51.33	$ 13,453	VTrans 406.25
Signs	2	Each	$ 127.00	$ 254	http://www.get-a-quote.net/QuoteEngine/costbook.asp?WCI=CostFrameSet&BookId=65
Landscaping - Topsoil	7	CY	$ 24.82	$ 184	VTrans 651.35
Landscaping - Seeding	0.4	MSF	$ 571.70	$ 229	http://www.get-a-quote.net/QuoteEngine/costbook.asp?WCI=CostFrameSet&BookId=65
24" Stop Bar	24	lf	$ 13.94	$ 335	VTrans 646.26
Stop sign and Post	1	Each	$ 170.00	$ 170	http://www.get-a-quote.net/QuoteEngine/costbook.asp?WCI=CostFrameSet&BookId=65
Durable White Line for parking Spaces	400.0	lf	$ 0.51	$ 204	VTrans 646.40

		Sub-Total	$	31,506
	Engineerin	15%	$	4,726
	Contingency	15%	$	4,726
		Total Estimate	$	41,000
Right-of-Way	0.300275 Acres	100000	$	30,000
		Rounding	$	80,000

Project 15: Bridge Street Market Place Lot without New Connector Road

Item	Quantity	Units	Unit Cost	Total / Subtotal	Notes
General Conditions					
Mobilize	1.0	LS	$ 1,000.00	$ 1,000	
Excavation/Demolition					
Clear and Grub	0	LS	$ 750.00	$ -	
Common Excavation Parking Lot	0	CY	$ 10.18	$ -	Vtrans 203.15
Common Excavation Bridge St Access Road	0	CY	$ 10.18	$ -	Vtrans 203.15
Subbase Crush Gravel (Coarse Graded)	506	CY	$ 18.89	$ 9,567	VTrans 301.25
Finegrade sub grade	3038.9	SY	$ 0.59	$ 1,793	VTRans 203.40
Roadway and Prking Lot					
4 " Bit. Concrete Pavement	656	Tons	$ 51.33	$ 33,693	VTrans 406.25
Signs	2	Each	$ 127.00	$ 254	http://www.get-a-quote.net/QuoteEngine/costbook.asp?WCI=CostFrameSet&BookId=65
Landscaping - Topsoil	0	CY	$ 24.82	$ -	VTrans 651.35
Landscaping - Seeding	0	MSF	$ 571.70	$ -	http://www.get-a-quote.net/QuoteEngine/costbook.asp?WCI=CostFrameSet&BookId=65
24" Stop Bar	24	lf	$ 13.94	$ 335	VTrans 646.26
Stop sign and Post	1	Each	$ 170.00	$ 170	http://www.get-a-quote.net/QuoteEngine/costbook.asp?WCI=CostFrameSet&BookId=65
Durable White Line for parking Spaces	1200.0	lf	$ 0.51	$ 612	VTrans 646.40
Cast-In-Place-Conc Curb Type A (At Island)	210	lf	$ 16.00	$ 3,360	VTrans 616.27

		Sub-Total	$	50,784
	Engineerin	15%	$	7,618
	Contingency	15%	$	7,618
		Total Estimate	$	67,000
Right-of-Way	0.62787 Acres	100000	$	63,000
		Rounding	$	133,000

Project 14: Bridge Street Market Place Lot Reconfigured with New Connector Road

Item	Quantity	Units	Unit Cost	Total / Subtotal	Notes
General Conditions					
Mobilize	1.0	LS	$ 1,000.00	$ 1,000	
Excavation/Demolition					
Clear and Grub	0	LS	$ 750.00	$ -	
Common Excavation of Existing Grass Area	237	CY	$ 10.18	$ 2,413	Vtrans 203.15
Subbase Crush Gravel (Coarse Graded)	1394	CY	$ 18.89	$ 26,331	VTrans 301.25
Finegrade sub grade	4181.7	SY	$ 0.59	$ 2,467	VTRans 203.40
Roadway and Parking Lot					
4 " Bit. Concrete Pavement	903	Tons	$ 51.33	$ 46,363	VTrans 406.25
Signs	2	Each	$ 127.00	$ 254	http://www.get-a-quote.net/QuoteEngine/costbook.asp?WCI=CostFrameSet&BookId=65
Landscaping - Topsoil	37	CY	$ 24.82	$ 919	VTrans 651.35
Landscaping - Seeding	2	MSF	$ 571.70	$ 1,143	http://www.get-a-quote.net/QuoteEngine/costbook.asp?WCI=CostFrameSet&BookId=65
24" Stop Bar	24	lf	$ 13.94	$ 335	VTrans 646.26
Stop sign and Post	1	Each	$ 170.00	$ 170	http://www.get-a-quote.net/QuoteEngine/costbook.asp?WCI=CostFrameSet&BookId=65
Durable White Line for parking Spaces	1820.0	lf	$ 0.51	$ 928	VTrans 646.40
Cast-In-Place-Conc Curb Type A (At Island)	680	lf	$ 16.00	$ 10,880	VTrans 616.27
Lighting	12	ea	$ 250.00	$ 3,000	

		Sub-Total	$ 96,204
	Engineerin	15%	$ 14,431
	Contingency	100%	$ 96,204
		Total Estimate	$ 207,000
Right-of-Way	1.5 Acres	100000	$ 150,000
		Rounding	$ 303,204

Valley Players Theatre Pocket Park

Item	Quantity	Units	Unit Cost	Total / Subtotal	Notes
Street Trees	4.0	each	$ 250	$ 1,000	Vtrans 656.30
Litter Bins	1.0	each	$ 300	$ 300	Allowance
Signs	1.0	each	$ 500	$ 500	Allowance
Planters	2.0	each	$ 500	$ 1,000	Allowance
Seating	2	each	$ 750	$ 1,500	Allowance
Sculpure/Art Work	1	LS	$ 2,500	$ 2,500	Allowance
Bike Rack	1.0	each	$ 500	$ 500	Allowance

	Sub-Total	$	7,300
Engineering	15%	$	1,095
Contingency	100%	$	7,300
	Total Estimate	$	15,695
	Right-of-Way Allowance	$	-
	Rounding	$	16,000

Genreal Wait Village Gateway Park

Item	Quantity	Units	Unit Cost	Total / Subtotal	Notes
Street Trees	20.0	each	$ 250	$ 5,000	Vtrans 656.30
Litter Bins	2.0	each	$ 300	$ 600	Allowance
Signs	1.0	each	$ 500	$ 500	Allowance
Planters	4.0	each	$ 500	$ 2,000	Allowance
Seating	4	each	$ 750	$ 3,000	Allowance
Sculpure/Art Work	1	LS	$ 2,500	$ 2,500	Allowance
Bike Rack	1.0	each	$ 500	$ 500	Allowance

	Sub-Total	$	14,100
Engineering	15%	$	2,115
Contingency	100%	$	14,100
	Total Estimate	$	30,315
	Right-of-Way Allowance	$	-
	Rounding	$	31,000

Lighting

Item	Quantity	Units	Unit Cost	Total / Subtotal	Notes
Tree Forms to Valley Player Theatre	47.0	each	$ 2,000	$ 94,000	Allowance

Sub-Total		$ 94,000
Engineering	5%	$ 4,700
Contingency	100%	$ 94,000
Total Estimate		$ 192,700
Right-of-Way Allowance		$ -
Rounding		$ 200,000

Lighting

Item	Quantity	Units	Unit Cost	Total / Subtotal	Notes
Valley Players Theatre to Old County Road	43.0	each	$ 2,000	$ 86,000	Allowance

Sub-Total		$ 86,000
Engineering	5%	$ 4,300
Contingency	100%	$ 86,000
Total Estimate		$ 176,300
Right-of-Way Allowance		$ -
Rounding		$ 180,000

Street Trees

Item	Quantity	Units	Unit Cost	Total / Subtotal	Notes
Tree Forms to Valley Player Theatre	47.0	each	$ 250	$ 11,750	Allowance

Sub-Total	$	11,750
Engineering 5%	$	588
Contingency 100%	$	11,750
Total Estimate	$	24,088
Right-of-Way Allowance	$	-
Rounding	$	25,000

Lighting

Item	Quantity	Units	Unit Cost	Total / Subtotal	Notes
Valley Players Theatre to Old County Road	43.0	each	$ 250	$ 10,750	Allowance

Sub-Total	$	10,750
Engineering 5%	$	538
Contingency 100%	$	10,750
Total Estimate	$	22,038
Right-of-Way Allowance	$	-
Rounding	$	23,000