

Road Safety Audit Review
Fays Corner
Town of Richmond

July 8, 2004



Note: THIS DOCUMENT IS EXEMPT FROM DISCOVERY OR ADMISSION UNDER 23 U.S.C 409

Road Safety Audit Review Observations

Instruction

The next section of the RSSAR Written Report contains tables that display observations and guidance. The safety issues in bold in the first column have been identified through this road safety audit review. For each observation, the Audit Team suggests the guidance listed below the observation as a possible remedial solution. Each Responsible Entity was mailed their respective tables. Please indicate in the second column if you agree to implement this measure and if not, support your decision by writing a reason in the last column. Responsible Entities are not obliged to follow the findings of this Written Report. However, the reasons for not implementing a finding should be documented (e.g. physical constraints, excessive cost, environmental constraints, etc.). A written response should be submitted to the Audit Coordinator within three weeks of receipt of the Written Report.

Road Safety Audit Review Observations

Fays Corner, Richmond

Observations and Possible Countermeasures	Beg. MM	End MM	Decision Agree/Reject	Planned Completion Date	Reason for Dismissal/Comments
Town's Response (1 of 5)					
<p>1) Poor corner sight distance is an issue on all legs. The Town should consider clearing brush as shown in Figure 6.</p>					
<p>2) The Stop Ahead sign on East Hill is properly located but could be enhanced with word markings. Consider installing "stop ahead" word markings.</p>					
<p>3) The East Hill Stop sign is not visible. The Town should consider clearing brush. Also relocate this sign to a better location (could ask AOT Traf Ops to help with proper location). The Town should also consider upsizing this sign.</p>					

Road Safety Audit Review Observations

Fays Corner, Richmond

Town's Response (2 of 5)

Observations and Possible Countermeasures	Beg. MM	End MM	<u>Decision</u> Agree/Reject	Planned Completion Date	Reason for Dismissal/Comments
<p>4) The East Hill approach lacks definition.</p> <p>The Town should consider installing a stop bar and "stop" word markings. The Town could ask AOT Traf Ops to help spot the stop bar.</p> <p>The double yellow line needs to be refreshed.</p>					
<p>5) The Kenyon approach lacks definition.</p> <p>The Town should consider installing a stop bar and "stop" word markings. The Town could ask AOT Traf Ops to help spot the stop bar.</p> <p>The Town should consider adding 25 feet of double yellow line.</p>					
<p>6) The Kenyon approach is confusing.</p> <p>The island is unnecessary. The Town should consider removing the island.</p> <p>With the island eliminated, the Town should consider reconfiguring and improving the radius for the main road.</p>					

Road Safety Audit Review Observations

Fays Corner, Richmond

Town's Response (3 of 5)

Observations and Possible Countermeasures	Beg. MM	End MM	<u>Decision</u> Agree/Reject	Planned Completion Date	Reason for Dismissal/Comments
<p>7) The intersection is within a curve. Signs and markings could be modified or added:</p> <p>The "Dangerous Intersection" signs are liability issues. It would be better to eliminate these and move the modified curve signs at these locations (on the south approach, a "be prepared to stop" diamond shape warning sign could be considered where the current curve sign is located since traffic does stop occasionally. See # 8 below for the east approach).</p> <p>The advisory speed in both directions could be reduced to 15 mph. The lettering on the current advisory speed signs is small. The Town should consider replacing these signs with 18" x 18" MUTCD compliant signs (See Appendix B). Alternatively, the Town could consider 24" x 30" rectangular signs with the actual safe speed wording.</p> <p>The chevrons could be increased in size. An extra chevron could be added in front of the Mobbs' house.</p> <p>All warning signs through the intersection could be replaced with Yellow Fluorescent sheeting (shown in Appendix B).</p> <p>There should be some edge lines to define the radii on all legs.</p> <p>Add yellow "cat tracks" between the centerlines of the south and the east approaches to define the curve.</p>					

Road Safety Audit Review Observations

Fays Corner, Richmond

Town's Response (4 of 5)

Observations and Possible Countermeasures	Beg. MM	End MM	Decision Agree/Reject	Planned Completion Date	Reason for Dismissal/Comments
<p>8) On the east approach of Hinesburg Road, the curve sign is concealed by the bridge object marker.</p> <p>The Town should consider moving the curve sign with possibly a new 15 mph advisory speed plaque before the bridge. The narrow bridge sign could be relocated on its own post 100 ft before the curve sign.</p>					
<p>9) Speeds are perceived to be high.</p> <p>The Town should consider conducting a study to reduce the travel speed. Could ask the MPO for possible assistance.</p>					
<p>10) Motorists lack guidance when traveling towards Richmond.</p> <p>A guide sign could be installed before the intersection.</p>					

Road Safety Audit Review Observations

Fays Corner, Richmond

Town's Response (5 of 5)

Observations and Possible Countermeasures	Beg. MM	End MM	Decision Agree/Reject	Planned Completion Date	Reason for Dismissal/Comments
<p>11) Sign assembly next to East Hill Rd provides too much information.</p> <p>The Town should consider separating the signs, keeping the street name signs with the stop sign and leaving the arrow sign by itself.</p>					
<p>12) There exists a major conflict: traffic going straight on Kenyon from Hinesburg (from the Hinesburg direction) do not have to stop and traffic going straight on East Hill or continuing on Hinesburg from Hinesburg (from Richmond direction) do not have to stop either.</p> <p>A stop sign on the south leg should be a last resort. Not everybody needs to stop, only those going straight to Kenyon or turning left on East Hill. Yielding to the right is the action sought. Consider one of the options shown in Appendix A.</p>					

Fays Corner, Richmond

Road Safety Audit Review Review Report

Definitions

A *Road Safety Audit Review* (RSAR) is a formal examination of an existing road in which an independent, multi-discipline team (the Audit Team) reports on potential safety issues. "Independent" means that the members of the team will not be directly involved with the location being audited.

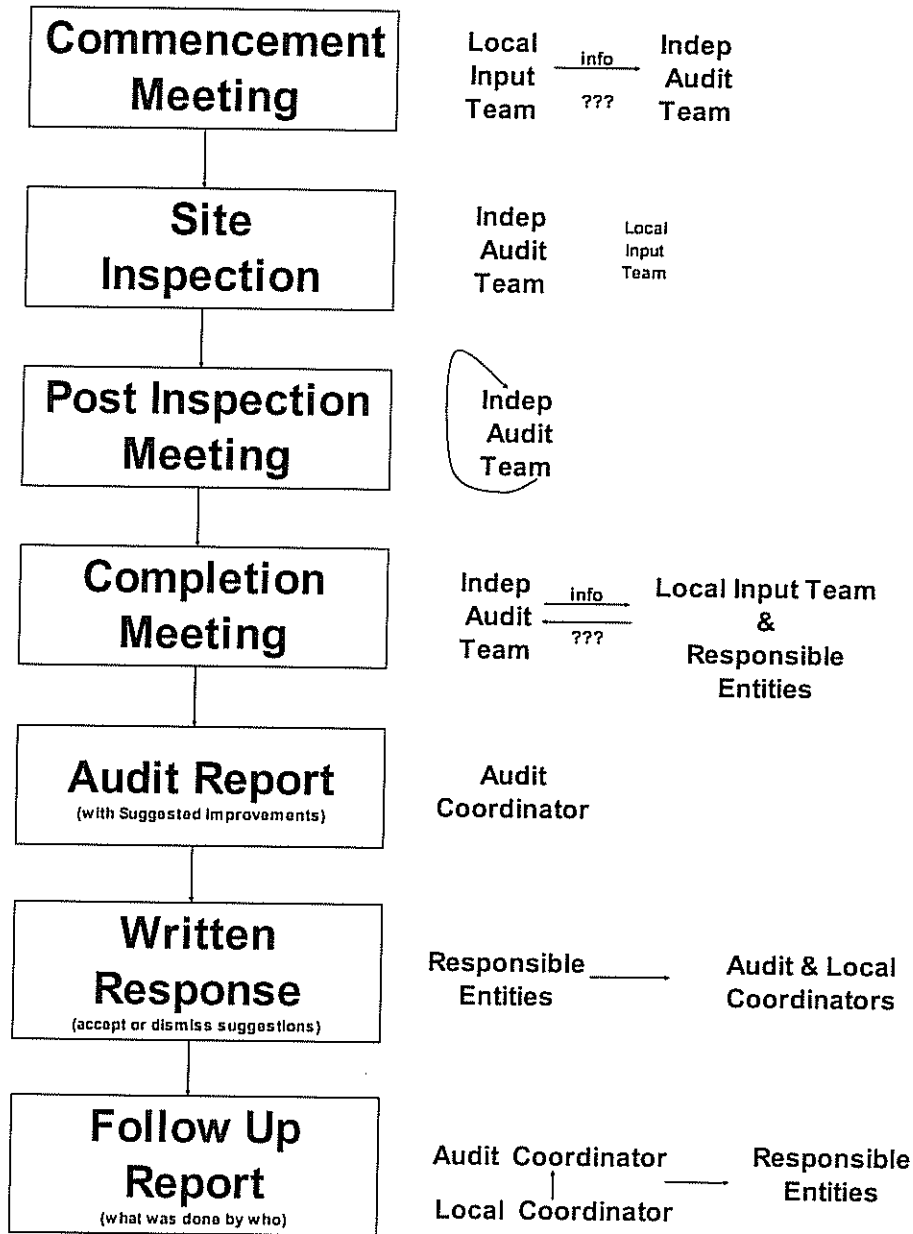
In addition to the Audit Team, a RSAR involves the following key players: Local Coordinator, Local Input Team and Responsible Entities.

The *Local Coordinator* is a representative of the local regional planning commission. His/her role is to put a Local Input Team together, aggregate traffic and safety information, lead the commencement meeting and follow-up with local responsible entities. The *Local Input Team* has for role to provide a local perspective at the commencement meeting. It is composed of representatives from the community such as Selectboard Members, Police, EMT, VTRANS District, and Other Local People. The *Audit Team* is responsible for performing a site visit, identifying safety issues and coming to a consensus with respect to possible guidance. *Responsible Entities* are any groups who own a roadway feature or who are responsible for making an improvement or initiating further studies. These could include for example, the VTRANS Design Section, the Local Town, the Police or the Local RPC/MPO. The role of the Responsible Entities is to assess the viability of the suggestions provided by the Audit Team and provide a written response to the Audit Coordinator, to schedule and/or perform the improvements if deemed necessary and to follow-up with the audit or local coordinator when the project is completed. Finally, the *Audit Coordinator* is the person responsible for setting up the audit and other meeting dates, to put the audit team together, to facilitate the post inspection meeting and, the completion meeting and to prepare the audit report.

RSAR Process

The RSAR process is composed of several steps as shown in the diagram below. The process starts with a *Commencement Meeting* between the Local Input Team and the Audit Team. The purpose of the meeting is for the Local Input Team to present community concerns to the Audit Team. A *Site Inspection* is then performed by the Audit Team. Members from the Local Input Team can accompany the Audit Team to further explain concerns. The site visit involves the identification of safety deficiencies as seen in the field. The Audit Team will usually drives through the location of interest to

Figure 1. ROAD SAFETY AUDIT PROCESS



get a feel for the area, traveling through each approach in the case of intersections. The team is to then drive at a slower speed to make observations. If needed, the team will also walk the location. Following the site inspection, the Audit Team holds a *Post Inspection Meeting*. It is during this meeting that the team members discuss their observations and identify safety issues. The team is to reach a consensus on the importance of each safety issue mentioned. Only those issues for which a consensus is reached are included in the RSAR findings. The final RSAR report (Written Report) is finalized following the

Completion Meeting during which the issues identified by the audit team are discussed with the Local Input Team and Responsible Entities. The meeting is to be constructive and foster dialogue between the parties involved. The *Written Report* identifies safety concerns and proposes guidance. These issues and solutions are presented in a tabular format associated to each Responsible Entity for ease of reporting. The Responsible Entities are to provide a Written Response on every finding of the Written Report as to its implementation. The Responsible Entity is not obliged to implement the findings in the Written Report. However, the reasons for not implementing a finding should be documented (e.g. physical constraints, excessive cost, environmental constraints, etc.).

The RSAR herein covers physical features which may affect road user safety and it has sought to identify potential safety hazards. However, the Audit Team points out that no guarantee is made that every deficiency has been identified. Further, if all the guidance in this report was to be followed, this would not confirm that the highway is “safe”; rather, adoption of the guidance should improve the level of safety of the facility.

Location

This RSAR is addressing the intersection locally known as Fays Corner. This intersection is the intersection of Hinesburg Rd that runs east to south with Kenyon Rd and East Hill Rd. The land use within the intersection includes one house on each of the four quadrants except for the southeast quadrant where trees, ledge and a brook are located. The speed limit on Hinesburg Rd is 40 mph.

This RSAR was conducted as a result of a request from the Town of Richmond via the Chittenden County Metropolitan Planning Organization (CCMPO) to provide some traffic engineering assistance.

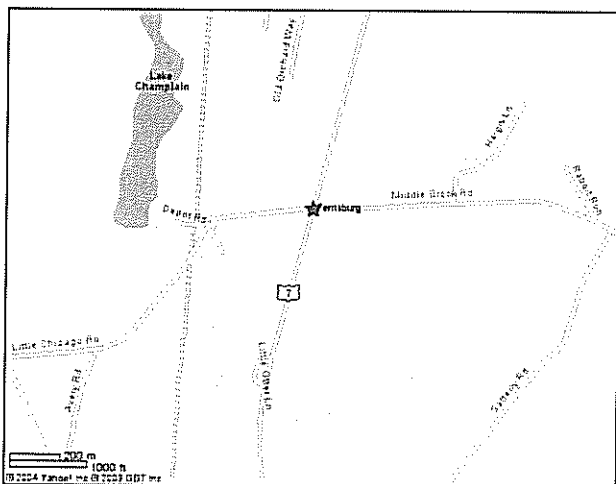
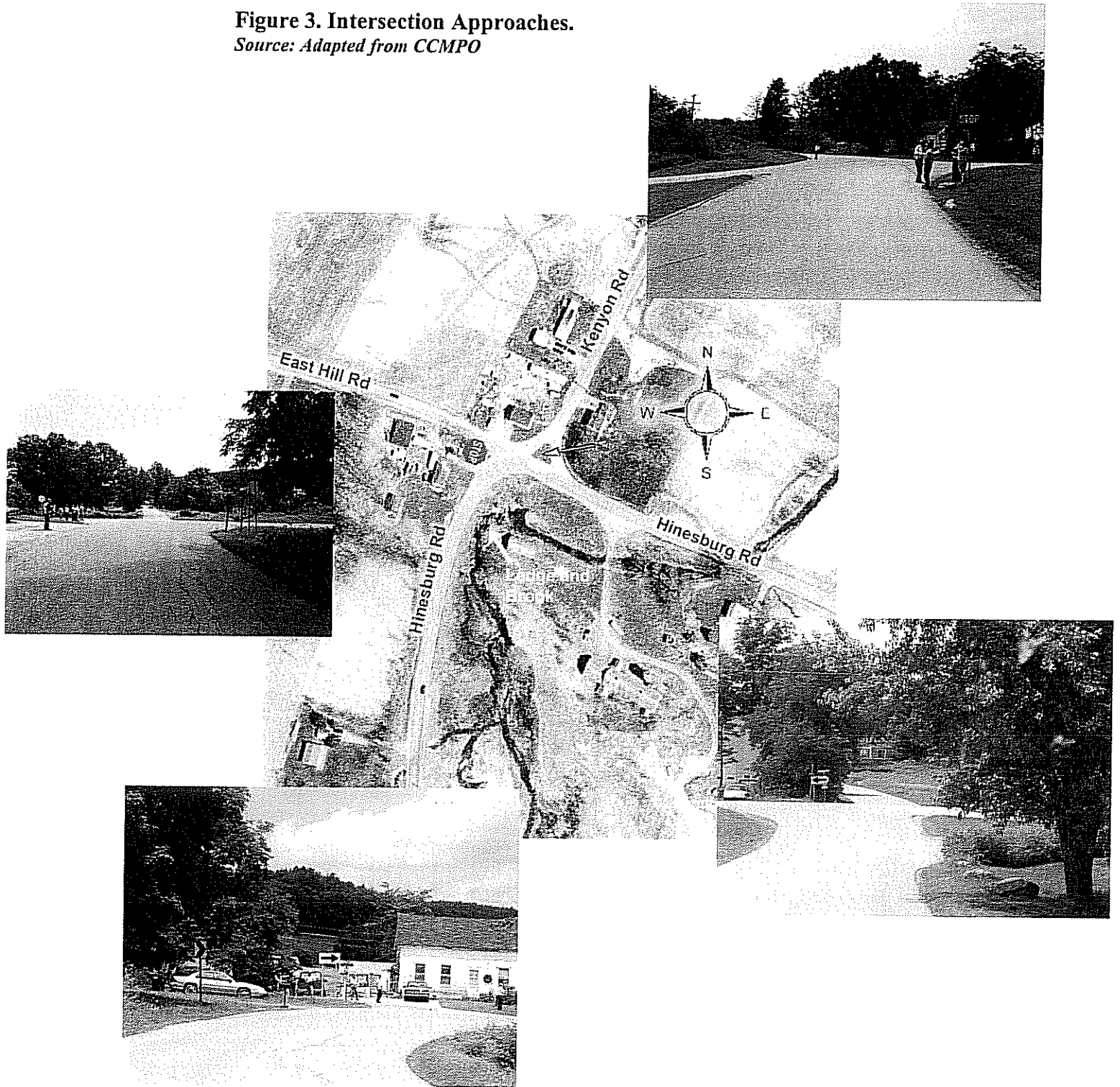


Figure 2.
Location Map

Figure 3. Intersection Approaches.
Source: Adapted from CCMPO



RSAR Team

The Road Safety Audit Review Team included the following representatives from the Vermont Agency of Transportation (VTRANS) and from the Northwest Regional Planning Commission (NRPC):

Art Bombardier,	Roadway Design (VTrans)
Randy Reed,	Maintenance (VTrans)
Steve Sherrill	Traffic Operations (VTrans)
Bill Rose	Planning (NRPC, 802 524-5958)

RSAR Team Coordinator

The road safety audit review coordinator was:

Mario Dupigny-Giroux, Traffic Operations (VTrans)

Local Coordinator

The local coordinator was:

Susan Smichenko, Planning (CCMPO, 802 660-4071)

Local Input Team

The following people from the local community were present at the Commencement Meeting:

Pete Parent	Richmond Selectboard
Ron Rodjenski	Town of Richmond
Mary Quiet	Resident (Kenyon Road)
Dick Hosking	District 5
Peter Gosselin	Town of Richmond

Information Reviewed in the Completion of the Audit Review

- (1) Crash Data from VIBRS (1998-2002)
- (2) Memorandum, Dufresne-Henry, dated Dec 20, 2003/revised June 7, 2004
- (3) Volume Count, CCMPO, July 2003
- (4) Field Observations by Mario Dupigny-Giroux, July 22, 2004

Crash Data VIBRS (1998-2002)

Table 1 displays crash data for crashes that were identified as having taking place near or at Fays Corner. This data was compiled (with no edits) from information obtained from the Vermont Incident Based Reporting System (VIBRS) Network¹ for the period ranging from 1998 to 2002.

Head on, Hitting a Fixed Object and Left or Right Turns were the main crash types at this intersection. In terms of causes, Driving Left of Center resulted in Head On crashes while Speeding resulted in Fixed Object or Left Turn crashes. Many of the crashes took place in the afternoon peak hour or in the early evening.

Table 1. Crash Data from VIBRS (1998-2002)

Date	Time	Street	Near Location	Crash Type	Cause	Road Surface	Weather
10/14/1998	15:20	Kenyon Road	Fay's Corner		speeding	dirt	clear or cloudy
5/8/1999	22:30	Hinesburg Rd	Kenyon Road	motor vehicle fixed object	speeding	blacktop	raining
5/10/2000	11:20	Kenyon Road	Fayes Corner	head on	drove left of center	dirt	clear or cloudy
6/6/2000	17:45	Kenyon Road	Fays Corners	motor vehicle fixed object	unknown	dirt	raining
10/10/2000	11:20	Fays Corner	Kenyon Road	left turn	speeding	blacktop	clear or cloudy
5/11/2001	18:15	Hinesburg Road	Fay's Corner	right turn	Drugs	blacktop	clear or cloudy
7/21/2001	18:22	Fay's Corners	Fay's Corners	head on	drove left of center	blacktop	clear or cloudy
12/18/2001	8:16	Hinesburg Road	East Hill Road	head on	drove left of center	blacktop	snow ing
6/17/2002	17:20	Kenyon Road	Hinesburg R	motor vehicle fixed object	speeding		clear or cloudy
11/21/2002	16:10	Hinesburg Road	Fay's Corners		failure to yield	concrete	clear or cloudy
11/29/2002	12:30	Hinesburg Road	Kenyon Road	left turn	speeding	concrete	snow ing

Memorandum, Dufresne-Henry, dated Dec 20, 2003/revised June 7, 2004

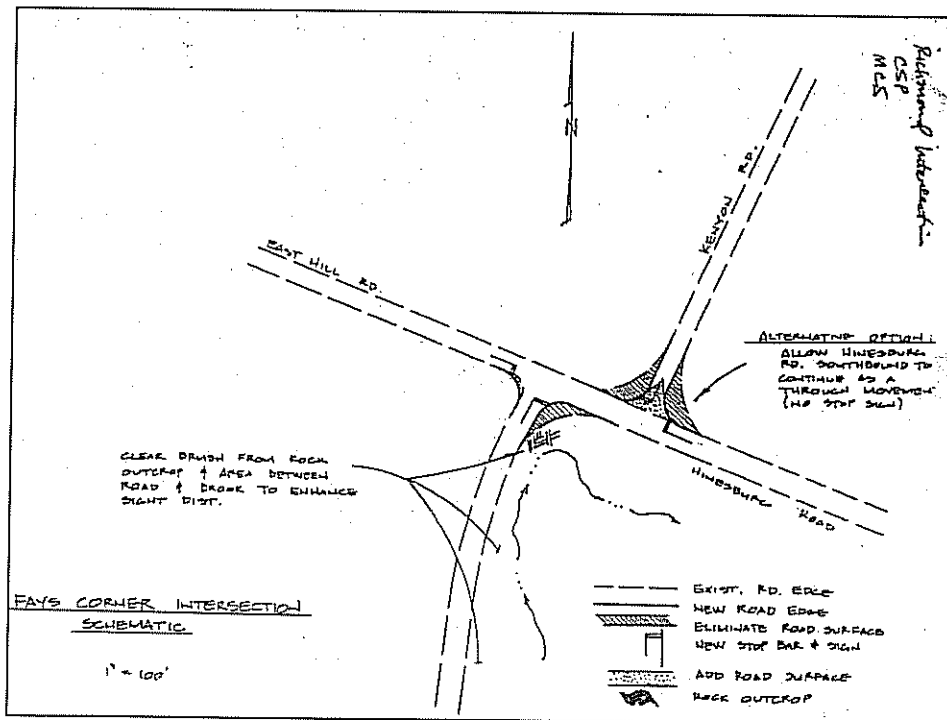
CCMPO contracted with the engineering firm Dufresne-Henry to provide technical assistance to the Town of Richmond with a number of intersections including the one at Fays Corner. In this memo, Dufresne-Henry supports the intersection schematic that was developed by Mike Weisel and which is shown in Figure 4. The following points were made:

- a) Create a four-way stop, or three-way stop condition.
- b) If a 4 way-stop is desired, we recommend regrading the east approach to achieve a suitable grade at the new stop bar (-3%). This would require raising and repaving the road.

¹ Initiated in 1992 by the Department of Public Safety, VIBRS is a wide-area computer network of law enforcement agencies who contribute crime data including crash data. VIBRS agencies include all Vermont State Police stations and a number of municipal and sheriff departments.

- c) Eliminate the large radius on the SE corner, and the "Y" configuration on the north approach.
- d) Leave / allow 40 ft. corner radii (and one foot shoulders where paved) for large trucks and plows.
- e) Place warning signage on the south approach (stop ahead symbol - see W3 -1 A on attached detail E- I 50M) 300 ft. before the intersection.
- f) Place a flashing beacon on this sign post. (see attached Standard Detail E- 1 5 OM).
- g) Place a double arrow warning sign at the intersection opposite the south approach.
- h) Clear the brush and regrade the adjacent area as much as possible on the east side of the south approach.
- i) Place / affix 2 orange flags on each new stop sign. Maintain these for at least a year.
- j) Add road name signage for Hinesburg Rd.

Figure 4. Mike Weisel's Intersection Schematic (not to scale)



Volume Count, CCMPO, July 2003

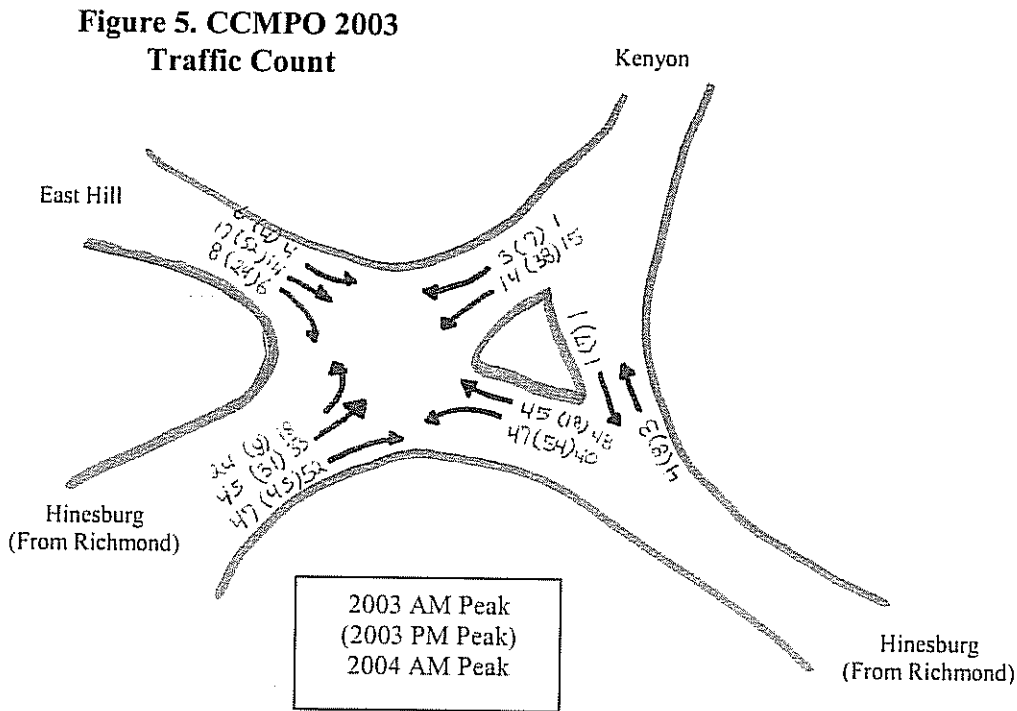
CCMPO performed a morning and an afternoon peak hour count on July 7, 2003. The morning count was performed between 7:00 am and 9:00 am while the afternoon count was conducted between 4:00 pm and 6:00 pm. The peak hour in the morning was identified to be from 7:15 am to 8:15 am. In the afternoon, the peak hour was determined to be from 5:00 pm to 6:00 pm. The raw data is shown in Figure 5. Also shown in this figure for comparison purposes are the raw data for a morning peak hour count performed on July 22 by VTrans. Comparing the two morning counts, it can be seen that traffic movements were found to be very similar from 2003 to 2004.

In the morning, three major movements can be identified as follows:

- Hinesburg Rd to Hinesburg Rd (in both directions)
- Hinesburg Rd (from Richmond) to East Hill Rd
- Hinesburg Rd (from Hinesburg) to Kenyon Rd

In the afternoon, the same movements, but in the reverse, are found:

- Hinesburg Rd to Hinesburg Rd (in both directions)
- East Hill Rd to Hinesburg Rd (to Richmond)
- Kenyon Rd to Hinesburg Rd (to Hinesburg)



Field Observations by Mario Dupigny-Giroux, July 22, 2004

A site visit was performed on July 22, 2004, during the 7:15 am to 8:15 am peak hour period identified in the CCMPO count to observe traffic movements. A count was also generated as mentioned above. The observer was parked at the pull out area just east of the intersection on Hinesburg Rd (towards Richmond). The following observations were made:

- 1) Traffic was observed to be arriving sporadically from all directions.
- 2) Traffic flow was heavier for a short period of time at around 7:50 am.
- 3) Motorists engaging in the curve (from the Hinesburg direction towards Richmond) seemed to stay inside their lane.
- 4) Motorists coming from Hinesburg Rd (from Richmond) seemed to be traveling fast.
- 5) Motorists wanting to continue to Kenyon Rd from Hinesburg Rd (from Hinesburg) were observed to stop before crossing the intersection (whether conflicting traffic was present or not).
- 6) During the one-hour observation period, four conflicts were observed between somebody wanting to continue on Kenyon Rd and a motorist from the Richmond direction on Hinesburg Rd either going straight on East Hill Rd or turning on Hinesburg (towards Hinesburg). One other conflict was observed with a vehicle turning left on East Hill and a vehicle from Richmond on Hinesburg turning left.

Commencement Meeting

The commencement meeting was held at the Richmond Town Offices on July 8, 2004, at about 12:30 pm.

Following a review of the RSAR concept by Mario Dupigny-Giroux, Susan Smichenko explained that the intersection was on a horizontal curve, that ledge and foliage were reducing the sight distance and that the intersection was confusing for the first time driver through the area. Susan also added that the grade differential at the intersection was high and that a major reconstruction would be costly.

Susan presented the traffic count that CCMPO had conducted in 2003. A few people felt that the count showed volumes that were too high on Kenyon Rd, as this road was a substandard road with a dirt surface. It was explained that Kenyon Rd was used as a shortcut to Williston and that it was used by many motorists.

A homeowner at the intersection, Mary Quiet, was asked to explain her perception of the problems at this intersection. Ms. Quiet went on to say that traffic was not slowing down and that motorists were making the sharp turn wide (sometimes crossing her yard). She

also said that some people on Kenyon Rd were running the stop sign (an enforcement issue). On East Hill, Ms. Quiet noted that the stop sign was hard to see because of brush.

Peter Gosselin supported Ms. Quiet's comment about high speed, stating that people were going too fast for the conditions, not expecting that a 45-mph road would have a turn at almost 90 degrees. Peter did say, however, that advanced warning signs were present.

Pete Parent of the Richmond Select Board, mentioned that he observed traffic one morning before going to work (6:00 am). He stated that people were being cautious and that most were probably familiar with the intersection. He further mentioned that rolling stops were common on East Hill Rd. He continued to say that he had talked to the local police and said that it had been at least 10 years since a crash report was filled at this intersection.

Ms. Quiet concurred that this was about when a car had hit their house and had taken out their porch. Last year, Ms. Quiet said that a car went up a neighbor's lawn to avoid another car.

Peter Gosselin mentioned that some sign improvements (additional stop sign on Kenyon Rd and a stop ahead sign on East Hill Rd) were installed recently. He also indicated that the Town was discussing with the owner to remove some brush on East Hill Rd. He then explained that the island on Kenyon Rd dated back from the 1950's and that it was a convenience back then. He and other town representatives felt that it was no longer needed nowadays and that it created conflicts.

Peter also pointed out that the mobile home on the northwest corner was obstructing the intersection and that driveways within the intersection were also creating problems. He further thought that the speed through the intersection should be reduced. He continued to say that there was a need to keep a large radius on Kenyon Rd because of delivery/moving/logging trucks.

Field Visit

Following the commencement meeting, the Review Team performed the site visit of the area. The site review was performed at around 1:00 pm.

Post Inspection Meeting

The Review Team met at the Richmond Town Offices following the field inspection to discuss their observations.

Potential Safety Concerns

This section describes the areas of safety concern identified by the Audit Review Team. The concerns are not listed in order of importance. Responsible entities are identified in a summary table at the end of this section (Table 2). The safety concerns are also reported on the observation tables that are specific to each entity responsible for the

improvements. These tables are found at the end of the report. Selected possible countermeasures for which the Town would be responsible are illustrated in Figure 15.

- ✓ Poor corner sight distance is an issue on all legs.
- ✓ The East Hill Stop sign is not visible.
- ✓ The Stop Ahead sign on East Hill is properly located but could be enhanced with word markings.
- ✓ The East Hill approach lacks definition.
- ✓ The Kenyon Rd approach is confusing.
- ✓ The Kenyon Rd approach lacks definition.
- ✓ The intersection is within a curve.
- ✓ On the east approach of Hinesburg Road, the curve sign is concealed by the bridge object marker sign.
- ✓ Speeds are perceived to be high.
- ✓ Motorists lack guidance (e.g., an out-of-state motorist asked somebody from the audit team which way it was to Richmond).
- ✓ Sign assembly next to East Hill Rd provides too much information.
- ✓ There exists a major conflict: traffic going straight on Kenyon Rd from Hinesburg (from the Hinesburg direction) do not have to stop and traffic going straight on East Hill or continuing on Hinesburg from Hinesburg (from the Richmond direction) do not have to stop either.

Figure 6. POOR CORNER SIGHT DISTANCE IS AN ISSUE ON ALL LEGS (view is of East Hill Rd Approach)

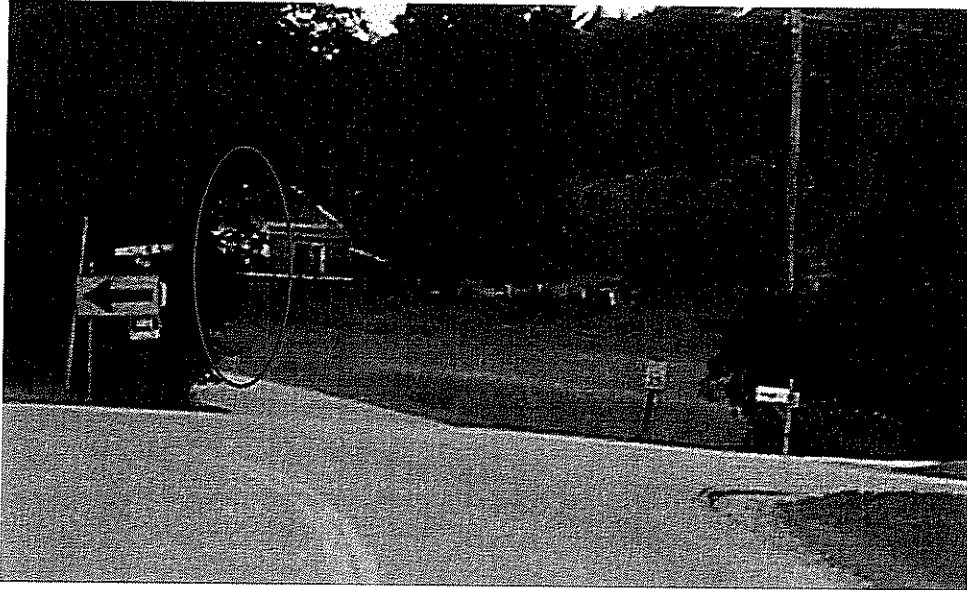


Figure 6 Continued. POOR CORNER SIGHT DISTANCE IS AN ISSUE ON ALL LEGS (top view is of the Hinesburg Rd Approach, from the Town of Hinesburg, bottom view is of Kenyon Rd)



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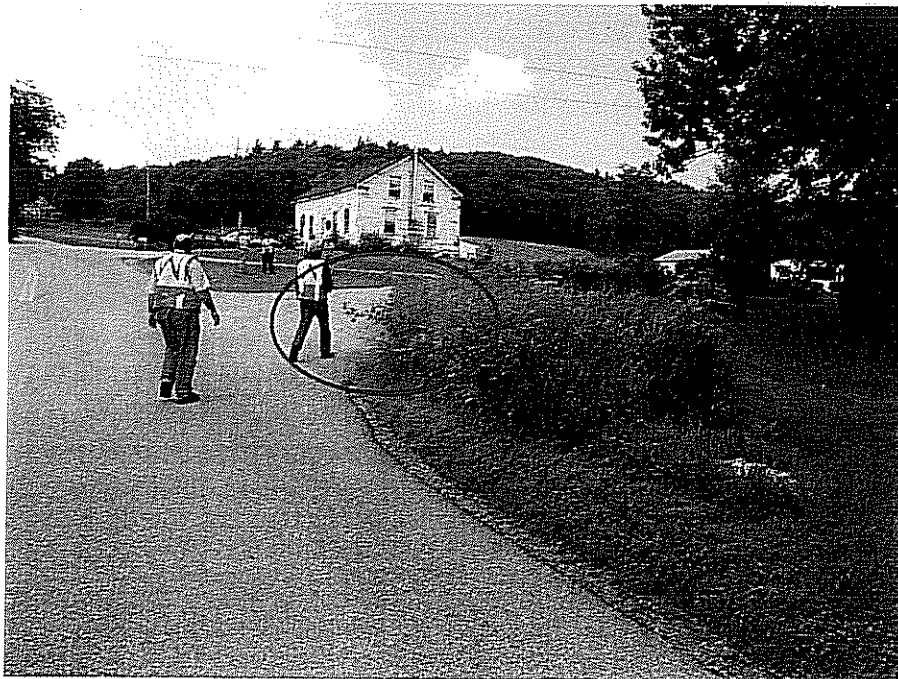
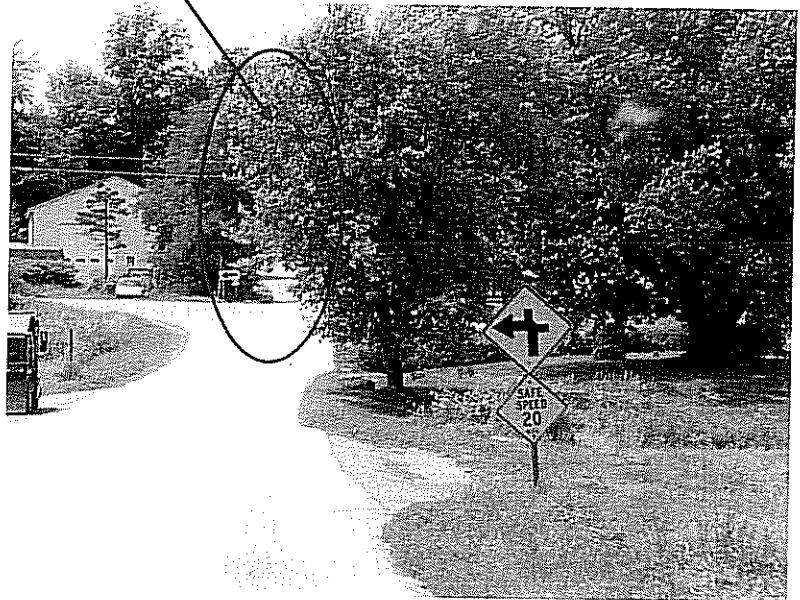
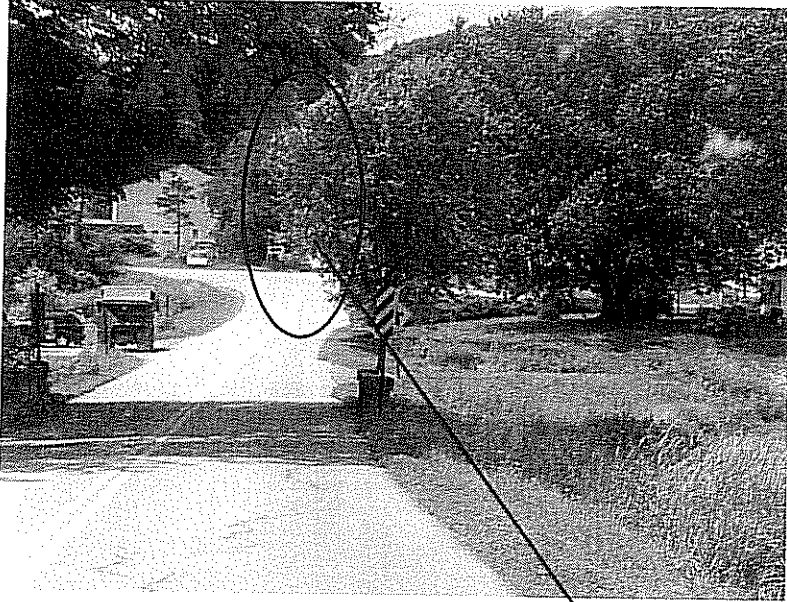
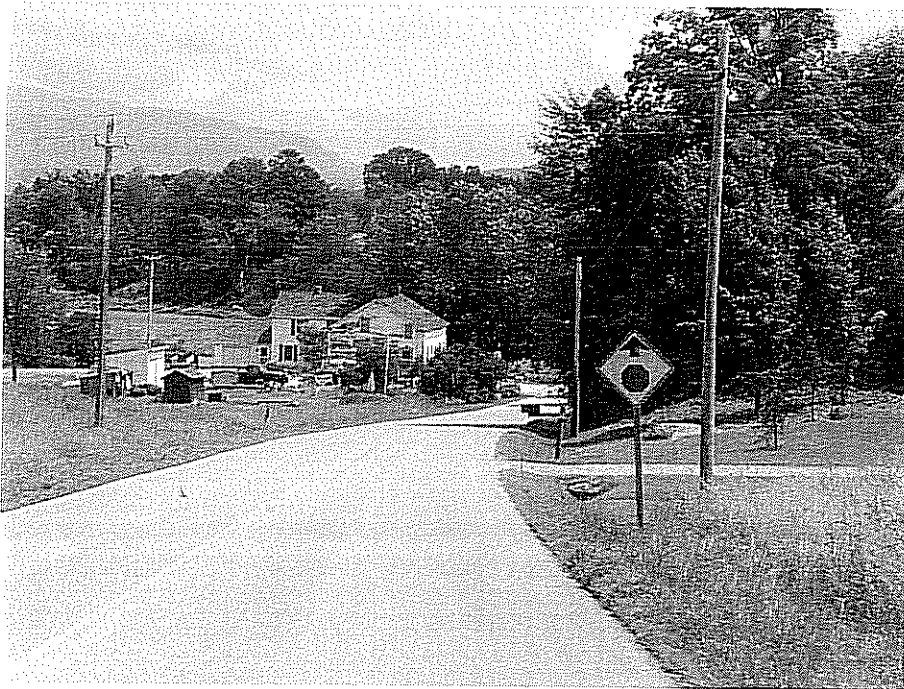


Figure 6 Continued. POOR CORNER SIGHT DISTANCE IS AN ISSUE ON ALL LEGS (top view is of the Hinesburg Rd Approach, from the Town of Richmond, before the bridge, bottom view is just after the bridge.)



**Figure 7. THE EAST HILL
STOP SIGN IS NOT
VISIBLE**



**Figure 8. THE STOP
AHEAD SIGN ON
EAST HILL IS
PROPERLY LOCATED
BUT COULD BE
ENHANCED WITH
WORD MARKINGS**

**Figure 9. THE
KENYON
APPROACH IS
CONFUSING,
THE ISLAND IS
UNNECESSARY**



**Figure 10. THE CURVE
SIGN IS CONCEALED
BY THE BRIDGE
OBJECT MARKER
SIGN ON HINESBURG
RD GOING
TOWARDS
HINESBURG**



Figure 11.
LETTERING ON
ADVISORY
SPEED SIGNS IS
SMALL

Figure 12. USE OF
DANGEROUS
INTERSECTION
SIGNS IS
IMPROPER.
BOTTOM
PICTURE,
NARROW
BRIDGE SIGN IS
TOO LOW.

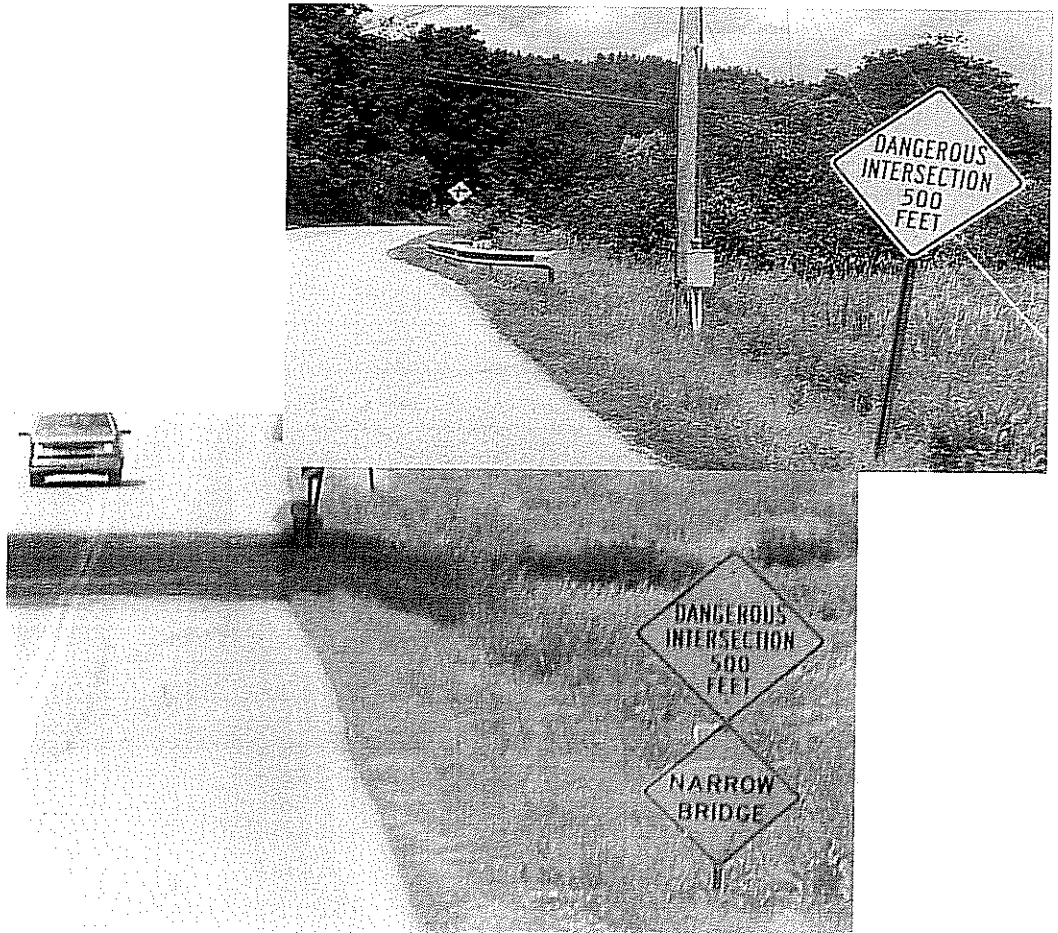


Figure 14. SIGN ASSEMBLY NEXT TO EAST HILL RD PROVIDES TOO MUCH INFORMATION



Figure 13. TRAFFIC CONFLICTS WERE OBSERVED IN THE FIELD

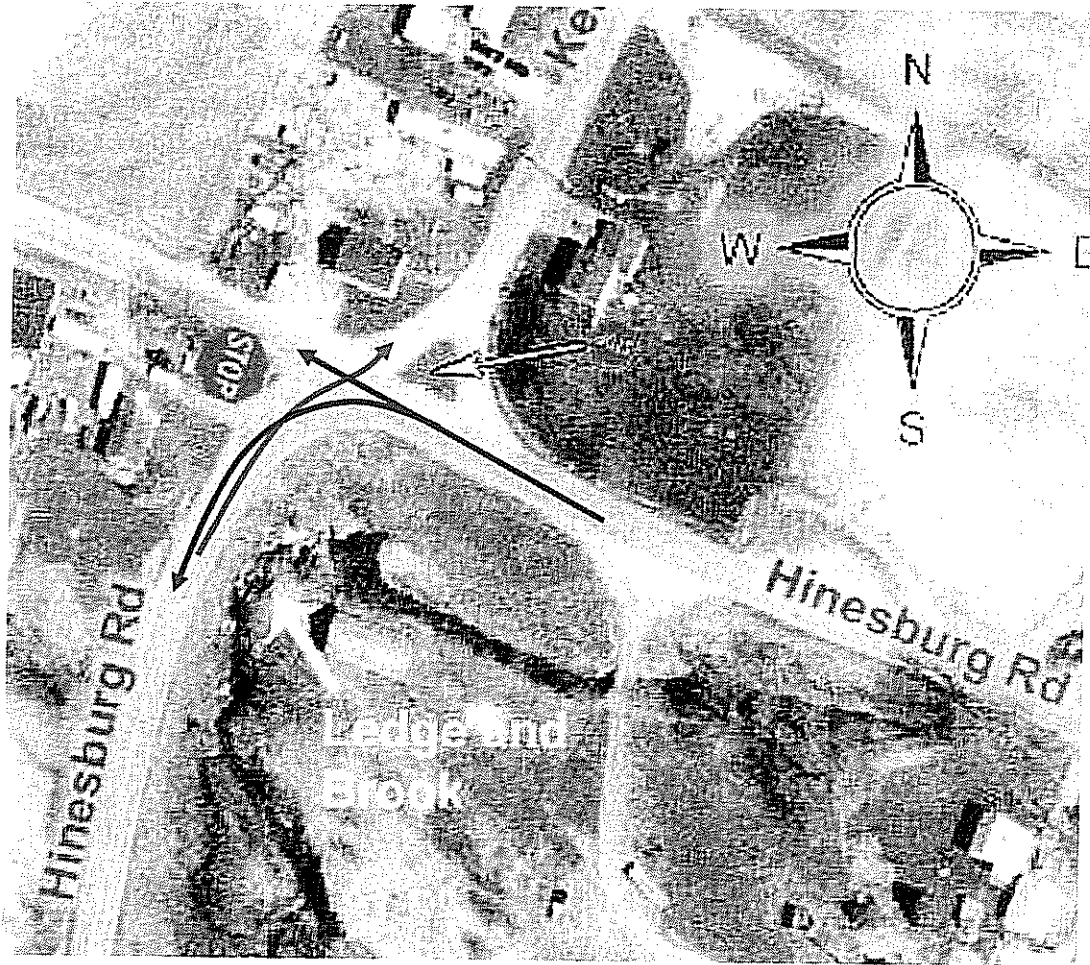


Table 2. Possible Countermeasures and Responsible Parties

Observations & Possible Countermeasures	Responsible Entities								Strategy
	MPO	Town	AOT Traffic Ops						
<p>Poor corner sight distance is an issue on all legs.</p> <p>Brush should be removed.</p>		√							The Town should consider clearing brush as shown in Figure 6.
<p>The East Hill Stop sign is not visible.</p> <p>At a minimum brush should be removed.</p>		√	√						The Town should consider clearing limbs of tree, and also relocating this sign to a better location (could ask AOT Traf Ops to help with proper location). The Town should also consider upsizing this sign.
<p>The Stop Ahead sign on East Hill is properly located but could be enhanced with word markings.</p>		√							Consider installing "stop ahead" word markings.
<p>The East Hill approach lacks definition.</p> <p>Additional markings should be considered.</p>		√	√						<p>The Town should consider installing a stop bar and "stop" word markings. The Town could ask AOT Traf Ops to help spot the stop bar.</p> <p>The double yellow line needs to be refreshed.</p>
<p>The Kenyon approach lacks definition.</p> <p>Additional markings should be considered.</p>		√	√						<p>The Town should consider installing a stop bar and "stop" word markings. The Town could ask AOT Traf Ops to help spot the stop bar.</p> <p>The Town should consider adding 25 feet of double yellow line.</p>
<p>The Kenyon approach is confusing.</p> <p>The island is unnecessary.</p>		√							The Town should consider removing the island. With the island eliminated, the Town should consider reconfiguring and improving the radius for the main road.
<p>The intersection is within a curve.</p> <p>Signs and markings could be modified or added.</p>		√							The "Dangerous Intersection" signs are liability issues. It would be better to eliminate these signs and move the modified curve signs at these locations (on the south approach, a "be prepared to stop" diamond shape warning sign could be considered where the current curve sign is located since traffic does stop occasionally. See below for the east approach).

Observations & Possible Countermeasures	Responsible Entities								Strategy
	MPO	Town	AOT Traffic Ops						
									<p>The advisory speed could be reduced to 15 mph. The lettering on the current advisory speed signs is small. The Town should consider replacing these signs with 18" x 18" MUTCD compliant signs (See Appendix B). Alternatively, the Town could consider 24" x 30" rectangular signs with the actual safe speed wording.</p> <p>The chevrons could be increased in size. A new chevron could be added in front of the Mobbs' house.</p> <p>All warning signs through the intersection could be replaced with Yellow Fluorescent sheeting.</p> <p>There should be some edge lines to define the radii on all legs.</p> <p>Add yellow "cat tracks" between the centerlines of the south and the east approaches to define the curve.</p>
<p>On the east approach of Hinesburg Road, the curve sign is concealed by the bridge object marker.</p> <p>The curve sign should be relocated.</p>		√							<p>The Town should consider moving the curve sign with possibly a new 15 mph advisory speed plaque before the bridge. The narrow bridge sign could be relocated on its own post 100 ft before the curve sign.</p>
<p>Speeds are perceived to be high.</p> <p>Sight restrictions, conflict points, the bridge, grades, curves, and the drives are conditions that could lead to a reduction in speed limit.</p>	√	√							<p>The Town should consider conducting a study to reduce the travel speed. The MPO could possibly help with this.</p>
<p>Motorists lack guidance when traveling towards Richmond.</p> <p>A guide sign could be installed before the intersection.</p>		√							<p>The Town could consider adding a guide sign.</p>
<p>Sign assembly next to East Hill Rd provides too much information.</p> <p>The arrow board should be on its own posts.</p>		√							<p>The Town should consider separating the signs, keeping the street name signs with the stop sign and leaving the arrow sign by itself.</p>

Observations & Possible Countermeasures	Responsible Entities								Strategy
	MPO	Town	AOT Traffic Ops						
There exists a major conflict: traffic going straight on Kenyon from Hinesburg (from the Hinesburg direction) do not have to stop and traffic going straight on East Hill or continuing on Hinesburg from Hinesburg (from Richmond direction) do not have to stop either.		√							The option in Figure 4 could possibly result in more rear-end crashes. A stop sign on the south leg should be a last resort. Not everybody needs to stop, only those going straight to Kenyon or turning left on East Hill. Yielding to the right is the action sought in this case. Consider one of the options shown in Appendix A.

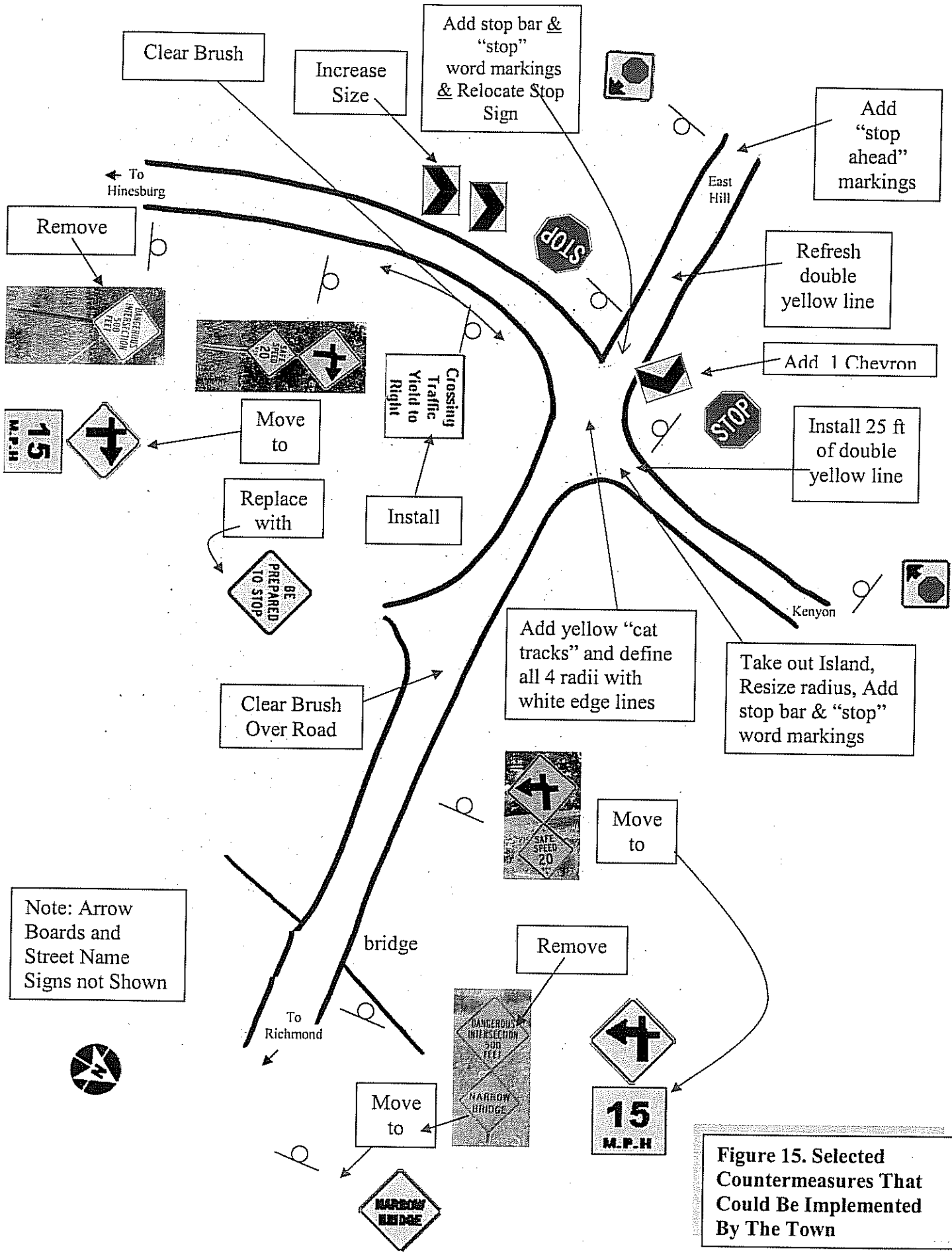


Figure 15. Selected Countermeasures That Could Be Implemented By The Town

Road Safety Audit Review Observations

Instruction

The next section of the RSAR Written Report contains tables that display observations and guidance. The safety issues in bold in the first column have been identified through this road safety audit review. For each observation, the Audit Team suggests the guidance listed below the observation as a possible remedial solution. Each Responsible Entity was mailed their respective tables. Please indicate in the second column if you agree to implement this measure and if not, support your decision by writing a reason in the last column. Responsible Entities are not obliged to follow the findings of this Written Report. However, the reasons for not implementing a finding should be documented (e.g. physical constraints, excessive cost, environmental constraints, etc.). A written response should be submitted to the Audit Coordinator within three weeks of receipt of the Written Report.

Road Safety Audit Review Observations

Fays Corner, Richmond

Traffic Operations' Response

Observations and Possible Countermeasures	Beg. MM	End MM	Decision Agree/Reject	Planned Completion Date	Reason for Dismissal/Comments
1) The East Hill Stop sign is not visible. The Town will consider relocating the sign. Show Town proper location if requested.					
2) The East Hill approach lacks definition. The Town will consider installing a stop bar. Show Town proper location if requested.					
3) The Kenyon approach lacks definition. The Town will consider installing a stop bar. Show Town proper location if requested.					

Road Safety Audit Review Observations

Fays Corner, Richmond

CCMPO's Response

Observations and Possible Countermeasures	Beg. MM	End MM	Decision Agree/Reject	Planned Completion Date	Reason for Dismissal/Comments
<p>1) Speeds are perceived to be high.</p> <p>The Town will consider conducting a study to reduce the travel speed. The MPO could consider helping the Town with this task if asked by the Town.</p>					

Road Safety Audit Review Observations

Fays Corner, Richmond

Observations and Possible Countermeasures	Beg. MM	End MM	Decision Agree/Reject	Planned Completion Date	Reason for Dismissal/Comments
Town's Response (1 of 5)					
<p>1) Poor corner sight distance is an issue on all legs. The Town should consider clearing brush as shown in Figure 6.</p>					
<p>2) The Stop Ahead sign on East Hill is properly located but could be enhanced with word markings. Consider installing "stop ahead" word markings.</p>					
<p>3) The East Hill Stop sign is not visible. The Town should consider clearing brush. Also relocate this sign to a better location (could ask AOT/Traf Ops to help with proper location). The Town should also consider upsizing this sign.</p>					

Road Safety Audit Review Observations

Fays Corner, Richmond

Observations and Possible Countermeasures	Beg. MM	End MM	<u>Decision</u> Agree/Reject	Planned Completion Date	Reason for Dismissal/Comments
Town's Response (2 of 5)					
<p>4) The East Hill approach lacks definition.</p> <p>The Town should consider installing a stop bar and "stop" word markings. The Town could ask AOT Traf Ops to help spot the stop bar.</p> <p>The double yellow line needs to be refreshed.</p>					
<p>5) The Kenyon approach lacks definition.</p> <p>The Town should consider installing a stop bar and "stop" word markings. The Town could ask AOT Traf Ops to help spot the stop bar.</p> <p>The Town should consider adding 25 feet of double yellow line.</p>					
<p>6) The Kenyon approach is confusing.</p> <p>The island is unnecessary. The Town should consider removing the island.</p> <p>With the island eliminated, the Town should consider reconfiguring and improving the radius for the main road.</p>					

Road Safety Audit Review Observations

Fays Corner, Richmond

Observations and Possible Countermeasures	Beg. MM	End MM	<u>Decision</u> Agree/Reject	Planned Completion Date
Reason for Dismissal/Comments				
<p>7) The intersection is within a curve. Signs and markings could be modified or added:</p> <p>The "Dangerous Intersection" signs are liability issues. It would be better to eliminate these and move the modified curve signs at these locations (on the south approach, a "be prepared to stop" diamond shape warning sign could be considered where the current curve sign is located since traffic does stop occasionally. See # 8 below for the east approach).</p> <p>The advisory speed in both directions could be reduced to 15 mph. The lettering on the current advisory speed signs is small. The Town should consider replacing these signs with 18" x 18" MUTCD compliant signs (See Appendix B). Alternatively, the Town could consider 24" x 30" rectangular signs with the actual safe speed wording.</p> <p>The chevrons could be increased in size. An extra chevron could be added in front of the Mobbs' house.</p> <p>All warning signs through the intersection could be replaced with Yellow Fluorescent sheeting (shown in Appendix B).</p> <p>There should be some edge lines to define the radii on all legs.</p> <p>Add yellow "cat tracks" between the centerlines of the south and the east approaches to define the curve.</p>				
	Town's Response (3 of 5)			

Road Safety Audit Review Observations

Fays Corner, Richmond

Town's Response (4 of 5)

Observations and Possible Countermeasures	Beg. MM	End MM	Decision Agree/Reject	Planned Completion Date	Reason for Dismissal/Comments
<p>8) On the east approach of Hinesburg Road, the curve sign is concealed by the bridge object marker.</p> <p>The Town should consider moving the curve sign with possibly a new 15 mph advisory speed plaque before the bridge. The narrow bridge sign could be relocated on its own post 100 ft before the curve sign.</p>					
<p>9) Speeds are perceived to be high.</p> <p>The Town should consider conducting a study to reduce the travel speed. Could ask the MPO for possible assistance.</p>					
<p>10) Motorists lack guidance when traveling towards Richmond.</p> <p>A guide sign could be installed before the intersection.</p>					

Road Safety Audit Review Observations

Fays Corner, Richmond

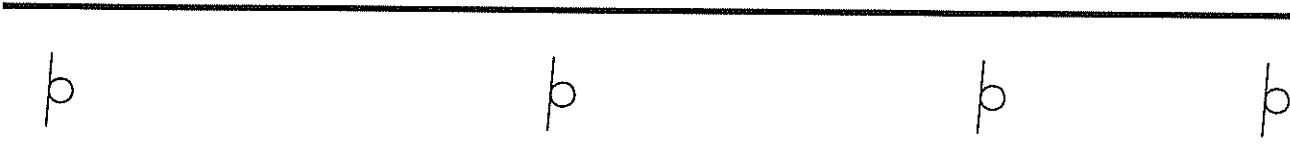
Observations and Possible Countermeasures	Beg. MM	End MM	Decision Agree/Reject	Planned Completion Date	Reason for Dismissal/Comments
<p>11) Sign assembly next to East Hill Rd provides too much information.</p> <p>The Town should consider separating the signs, keeping the street name signs with the stop sign and leaving the arrow sign by itself.</p>					
<p>12) There exists a major conflict: traffic going straight on Kenyon from Hinesburg (from the Hinesburg direction) do not have to stop and traffic going straight on East Hill or continuing on Hinesburg from Hinesburg (from Richmond direction) do not have to stop either.</p> <p>A stop sign on the south leg should be a last resort. Not everybody needs to stop, only those going straight to Kenyon or turning left on East Hill. Yielding to the right is the action sought. Consider one of the options shown in Appendix A.</p>					

Town's Response (5 of 5)

Appendix A

Possible Sign Arrangements to
Deal with Conflicting Movements on
Hinesburg Road Going Northbound

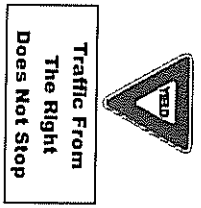
**Possible Sign Arrangements to Deal with
Conflicting Movements
Hinesburg Road Going Northbound**



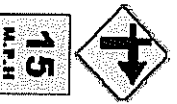
current



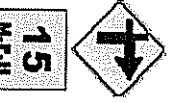
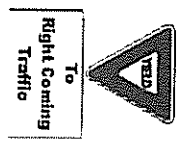
A



OR



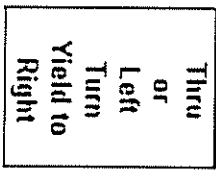
B



C



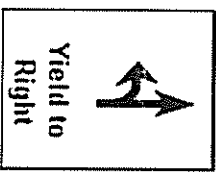
OR



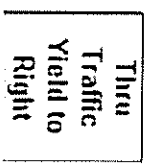
OR



D



OR



*"Be Prepared To Stop" sign suggested because vehicles could be stopped at the intersection. Some form of yield treatment to warn the unfamiliar drivers that if they are crossing or turning left, they should stop if a car is coming from the right.

Appendix B
Selected Sign Details
&
Example of Fluorescent Yellow Sheeting

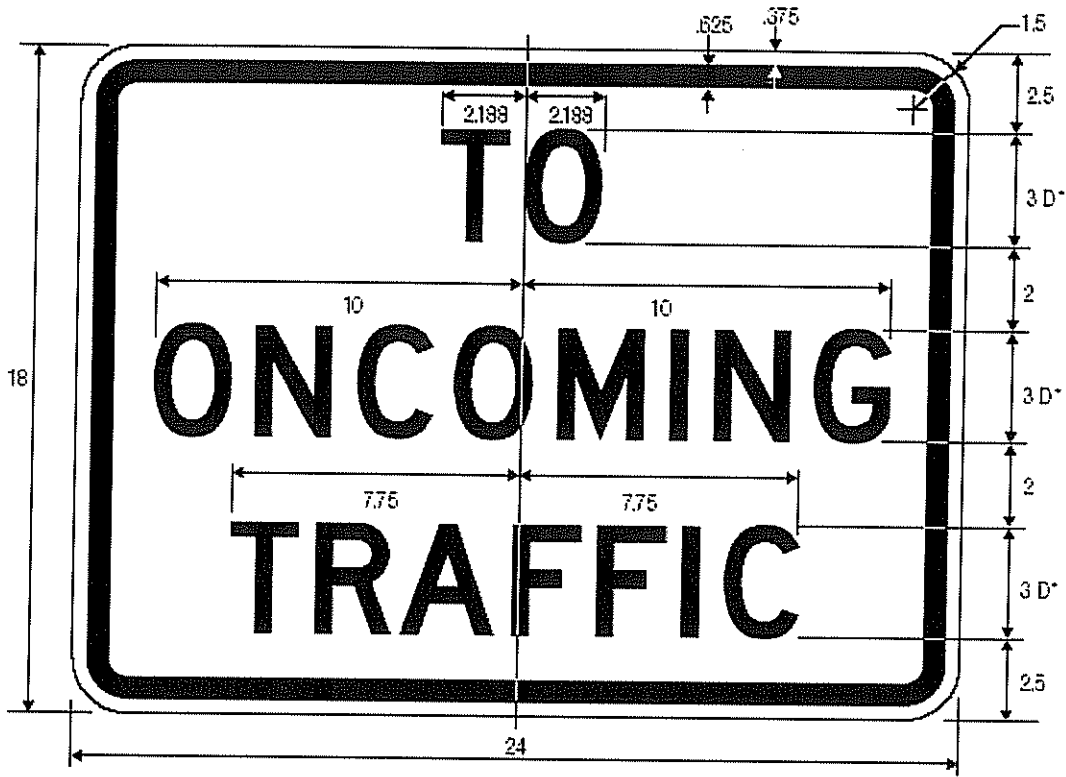


W13-1

*Increase spacing 100%.
 **Optically space numerals about vertical centerline.

A	B	C	D	E	F	G	H	J
18	.375	.625	2.5	8 E	2	3 E	5.313	1.5
24	.375	.625	3.625	10 E	2.75	4 E	7.063	1.5

COLORS: LEGEND — BLACK
 BACKGROUND — YELLOW (RETROREFLECTIVE)



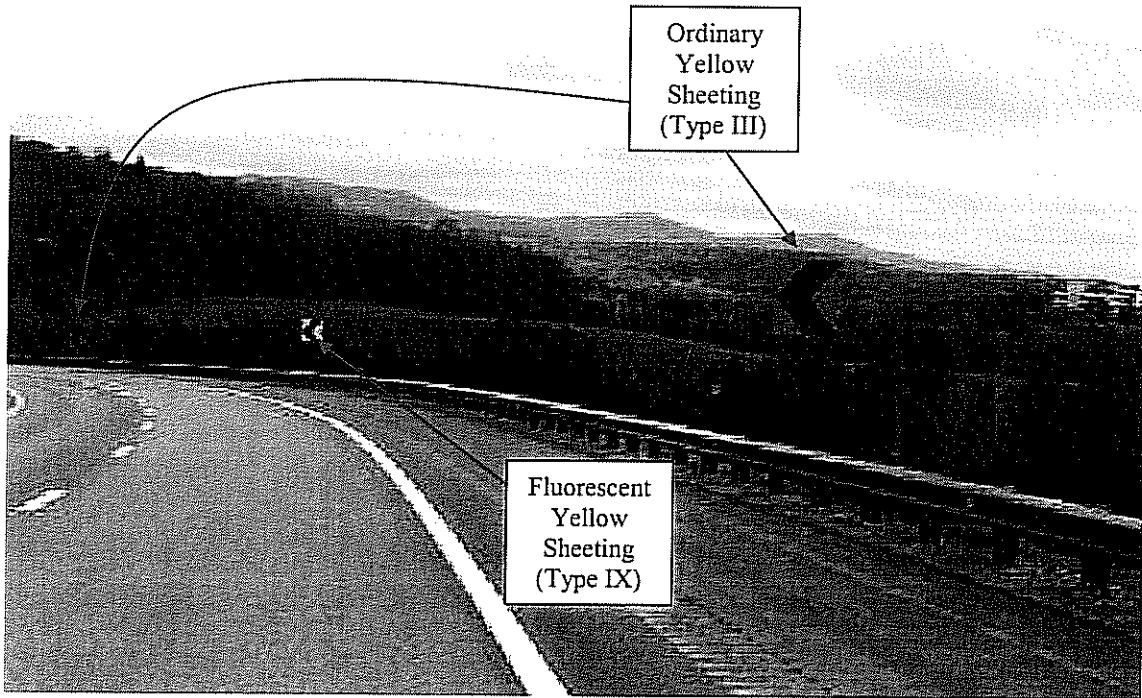
R1-2a

*Series2000 Standard Alphabets.

COLORS: LEGEND - BLACK
 BACKGROUND - WHITE (RETROREFLECTIVE)

**Comparison
Yellow Type III Sheeting
&
Fluorescent Yellow Type IX Sheeting
(shown here is 3M™ Diamond Grade VIP)**

I-89 NB, before exist 8, Montpelier



Appendix C
Completion Meeting Notes

The following people from the local community were present at the Completion Meeting held at the Richmond Town Office on October 1, 2004:

Mitchel Cypes	Town of Richmond
Mario Dupigny-Giroux	VTrans
Pete Parent	Richmond Selectboard
Mary & Steve Quiet	Residents (Kenyon Road)
Ron Rodjenski	Town of Richmond
Susan Smichenko	CCMPO
Fran Thomas	Richmond Selectboard

The meeting started at about 10:45 am.

Mario Dupigny-Giroux explained the purpose of the completion meeting and discussed briefly the traffic concerns and the safety issues identified by the Audit Team. Most of the improvements proposed in the RSAR draft report dealt with replacing or relocating signs with bigger and brighter ones.

The group spent some time discussing the recommendation of the Audit Team to remove the island on Kenyon Road. Mitchel Cypes suggested that the new realignment should provide a visual deterrent to keep through traffic along Hinesburg Road. He also suggested that a "pavement ends" sign could provide an additional clue that Kenyon Road was not the through road.

The group also discussed traffic control issues for traffic on Hinesburg Road going from the town of Hinesburg towards the town of Richmond. A number of possibilities were presented in the RSAR draft report that had to do with some form of yielding. Ron Rodjenski suggested that a formal yield sign would be confusing. Mary Quiet explained that the traffic should be stopped on this approach since, at many occasions, vehicles went off the road on their yard or that of their neighbor. It was explained that not all traffic needed to stop on this approach and that the traffic volumes present nor the number of crashes warranted an all-way stop control as per the Manual on Uniform Traffic Devices (MUTCD). Ron Rodjenski stated that the Town would not install a four-way stop if the requirements were not met as it would increase tax payers' liability. The idea of a three-way stop was advanced. It was felt, however, that the concept of having three approaches to stop and one having free flow was not supported by the MUTCD and that it would be confusing and would deter the safety of the intersection. Pete Parent inquired if guardrail could be installed for the purpose of preventing vehicles from going off the road.

Ron Rodjenski concluded the meeting by explaining that the process from here would be for VTrans to provide a final RSAR report to the Town and for the Selectboard to review the recommendations at an upcoming meeting. Ron invited those present to send comments to VTrans concerning the draft report in the next few days.

The meeting was adjourned at about 12:30 pm.

Ron Rodjenski

From: "Dupigny-Giroux Mario" <Mario.Dupigny-Giroux@state.vt.us>
To: "Ron Rodjenski" <rrodjenski@gmavt.net>
Sent: Tuesday, November 23, 2004 11:10 AM
Subject: RE: Fays Corner - Richmond - RSAR

Thanks for the info.

Mario Dupigny-Giroux

Traffic Safety Engineer

Vermont Agency of Transportation

1 National Life Building, Drawer 33

Montpelier, VT 05633

Phone: 802 828-0169

Fax: 802 828-2640

Email: mario.dupigny-giroux@state.vt.us

-----Original Message-----

From: Ron Rodjenski [<mailto:rrodjenski@gmavt.net>]
Sent: Monday, November 22, 2004 2:14 PM
To: Dupigny-Giroux Mario
Cc: Peter & Kelly G; Richmond HIGHWAY; Michael Weisel
Subject: Fays Corner - Richmond - RSAR

Hello Mario

The Selectboard has agreed to follow all of the recommendations in the RSAR. The Board has asked that the town road foreman develop a work plan with signage being completed as soon as possible, hopefully by January 1, 2005. Line striping and other improvements should be completed by the end of the 2005 work season.

Thank you once again for this very valuable service to the municipality. As soon as a work plan is printed, I will forward to you for your files.

Ron
Ronald Rodjenski, Jr.
Town Administrator
Richmond Town Administrator's Office
PO Box 285 - 203 Bridge Street
Richmond, VT 05477
802-434-5170
rrodjenski@gmavt.net
www.richmondvt.com