

May 8, 2013
Medway Planning and Economic Development Board
Medway Senior Center, 76 Oakland Street
Medway, MA 02053

BOARD MEMBERS PRESENT: Andy Rodenhiser, Bob Tucker, Karyl Spiller-Walsh, Chan Rogers, and Tom Gay.

ABSENT WITH NOTICE:

ALSO PRESENT:

Susy Affleck-Childs, Planning and Economic Development Coordinator
Amy Sutherland, Meeting Recording Secretary
Dave Pellegri, Tetra Tech
Mike Hall, Tetra Tech

The Chairman opened the meeting at 7:00 pm.

There were no Citizen Comments.

April 16, 2013 PEDB Meeting Minutes

**On a motion made by Bob Tucker and seconded by Karyl Spiller-Walsh, the Board voted unanimously to accept the minutes from April 16, 2013.
(Chairman Rodenhiser abstained from vote)**

Committee Reports:

- Bob Tucker reported on the CPC meeting. A group of citizens were present looking to make a request for the Town to purchase the old fire station #1 and the Cole property on Main Street. The citizens did not come in with a plan.
- Karyl Spiller-Walsh reported on the recent Design Review Committee meeting. Karen Johnson from Charter Realty was present and there was discussion about Starbucks. An application and site plan was filed last week with PEDB and will be scheduled soon.
- Susy Affleck-Childs reported that the Town is moving forward on selecting the vendor for the Town's involvement with the Solarize Mass program. The vendors have been narrowed down from seven to three. Those three will be interviewed and then a decision will be made.
- Susy Affleck-Childs noted that the Board's recommendations for the zoning articles for town meeting have been formalized and submitted to the Town Moderator.

Economic Development Coordinator:

Economic Development Coordinator Claire O'Neil attended the meeting to discuss the proposed warrant article regarding the establishment of a redevelopment authority. This article pertains to the Oak Grove property. 30 acres are developable. the Town is currently getting a good handle on who owns what. There was a meeting last week with the Finance Committee. This meeting was an information session to let the Finance Committee know why there is a need for the redevelopment authority. The Finance Committee and the Board of Selectmen voted to approve their support of this article. The EDC is in support of this article but also wants to see a budget crafted to support this type of venture. The appointment of members would take place once established. Members would be appointed by the BOS.

Member Tucker indicated that he does not know enough about this to recommend or support this article.

Claire explained that when combined with an urban renewal plan, this body will have special powers to assemble land. It also provides powers to negotiate land deals. This would provide for capacity to move forward in an expedited way. The purpose is focused on Oak Grove but it could also include other projects. It allows the people to be part of the process and is in the best interest of the abutters.

Member Rogers communicated that this is a simpler process for Town to take large parcels of land and this process gives clear title for towns.

On a motion made by Tom Gay and seconded by Karyl Spiller-Walsh, the Board voted unanimously to support the town meeting warrant article to establish a redevelopment authority.

Tri Valley Commons Site Plan Public Hearing

The Chairman reopened the continued public hearing for Tri Valley Commons at 7:15pm.

The documents entered into the record were the following:

- Email from Mike Hall of Tetra Tech dated May 8, 2013 regarding the Saturday analysis. **(See Attached)**
- Letter dated May 6, 2013 from Medway Building Commissioner John Emidy. **(See Attached)**
- A letter dated April 29, 2013 from TVC attorney Joseph Antonellis. **(See Attached)**
- A Traffic Impact & Access Study – Saturday supplemental dated April 2013. **(NOTE – This is not attached as it is so large)**
- A letter from Bill Scully of Green International Affiliates dated April 18, 2013. **(See Attached)**
- A letter from Places Associates dated April 22, 2013. **(See Attached)**

Attorney Antonellis informed the board that their traffic engineer Bill Scully is stuck in traffic en route to the meeting. He did want to address the report from the Cassidy letter.

The Chairman noted that the letter from Places Associates was forwarded to Tetra Tech for review.

Attorney Antonellis presented a letter in response dated April 29, 2013. The letter indicates that the Places Report refers to a set of plans that have been modified since original submission. The Tri-Valley team communicates that they were surprised that the revised plans were not reviewed by the Cassidy's engineer. The mitigation measures referenced in the report are outside of the application process. Attorney Antonellis also responds that the Cassidy family has every right to hire an engineer, but the project as presented is being reviewed by the Town consultants with the intent to meet the requirements of the Rules and Regulations as set by the Board.

A letter was provided to Mr. Cassidy from the building inspector in response to the question whether a retaining wall is considered to be a structure for zoning purposes. This letter indicated that the definition does not apply to retaining walls or similar structures.

Member Tucker would like the original question which was asked by Mr. Cassidy to be put into context.

Mike Hall from Tetra Tech indicated that he received the traffic information on Monday and has not provided follow-up yet. Some of the analysis was cleaned up. The analysis has the right numbers for volume for trip generation summary. These were slightly different.

Member Rogers responded that the Rt. 109 project will not be started until 2016.

Tetra Tech Consultant Mike Hall still wants something written explaining how changes to the phasing of signals will be done and this needs to be documented pre-109 reconstruction project including what mitigation will be done to make this project work; for example, at Holliston Street. There is a greater degree in service. The reports are devoid of Saturday calculations with queuing.

TVC traffic engineer Bill Scully responded that this was done.

Mike Hall responded that the information came in Monday evening and the Saturday numbers were not included.

Mr. Scully responded that he delivered the Saturday report and he made projections using standard tools. As part of the simulation the analysis was in default due to the longer duration and he will provide the information to Tetra Tech tonight. The report summarized the Saturday analysis and will address some of the questions from previous meetings. In regards to the Saturday numbers, we are looking mainly at the shopping center as the focus of the trip generation report. There are more vehicle trips. Analysis is based on higher volumes. There will be long queues on west bound trips. This has been done on the conservative side. The operating conditions at signals with the project and proposed plan will be at level D or better. Walgreens will be at a level C or better. Medway shopping Center's west signal will be at C or better. The summary of vehicle trips was reviewed and is variable. The trip distribution was done. This was in the original 42% of traffic from west side. 25% will head to the east. At

times, there will be long queues on the west side. There was review of looking at a right turn at the site after the guard rail about 125 feet with tapering and this does not change the west bound queue.

The Town has kept one lane per direction and most of the flow is through moves. Physically, widening would end up with a taking and a portion would be on another property. This is not a benefit and he would not recommend or commit to it.

Another issue was if people want to get to Gould's with a left turn from the new driveway, we would put a do not block sign. There is only a single lane coming in. It is easy to make a right turn out and it would be consistent with the Rt. 109 project. This is why we went with this. A right in and right out of Gould's will not hurt their project, and provides safety and convenience. This would not change the level of service. This does not change the conditions at the intersections. They will do the radio control and will coordinate with Holliston Street traffic signal. These plans will be provided to the Town for review. The Dunkin Donuts' driveway will be modified to consolidate that movement. The applicant will end up providing reconstructive or resurfacing of 600 ft. of road in accordance of the Rt. 109 plan. There will be additional markings.

Mike Hall responded that there has been a revised queue analysis, but he needs to see the Saturday numbers. Mike did indicate that there was an email from GPI with concerns which need to be addressed.

The Chairman suggested that a bulleted list be created and provided to the Board with any outstanding issues.

Consultant Hall indicated that he must get all the facts with final comments or recommendations and then the list will be created.

The Consultant indicated that the trip generation was done conservative. Some of the numbers are accurate but we need to think about ten years from now, a different tenant may be there.

Attorney Antonellis responded that we did review the master plan for the Town of Medway and we thought about this in relation to the placement of the buildings and we did this in such a way to provide some access to the rear property (owned by the Cassidies). We are not land locking anyone.

Consultant Hall explained that the applicant can provide some sort of safe guard like a queue detector. This could be hardwired to the signal. They need to work with GPI to determine where to place this. We want it at 95% distance. We want a good cushion 150 ft. from signal. This is a reasonable solution. The timing information is provided for weekday calculations without Saturday. The number of cars will change the percentage with Saturday numbers.

The two big concerns are:

1. Cross connection at Dunkin Donuts and DR. Cooper's office.
2. Queuing westbound on Rt. 109.

Member Tucker wanted to know when the reports will be provided.

Mike Hall indicated that he did not receive the subsequent information. The additional information has not provided. At the last meeting he said he needed ten days to provide review and reanalysis. The final analysis numbers need to be further reviewed.

Member Rogers wanted it noted that this applicant has been put through hoops for five weeks.

Abutter, Dr. Cooper:

Dr. Cooper expressed concerns about the light/traffic signal and the ability for his clients to get in and out of his property. He feels he is being discriminated against. His patients will not be able to leave safely. He does not feel like he is being treated fairly and his interests are not being considered.

The Chairman responded that what is being proposed is separate from the Rt.109 project.

There was a suggestion to move the driveway westerly to coordinate with Dunkin Donuts.

Mr. Scully responded that no one told Dr. Cooper that his driveway needed to be moved. The idea raised was that they could accommodate moving the driveway which gives distance from the signal to get out. The left turn lane was lengthened and right turn movement has no effect. The clients can make the right out. The observation was done and there are not really large numbers. There was one car leaving left and there were four vehicles which took a right.

Tighe and Bonde:

A traffic engineer from Tighe and Bond was present representing Medway Commons. They are concerned that the level service at their Main Street traffic signal went from B to C. They have not seen the new updated copies. They are also concerned that there is a discrepancy with the traffic numbers provided in appendix.

Mr. Scully responded that there are differences in the models. Initially we went with Synchro and we were requested to use Syntrec. We were asked to use both.

Consultant Hall responded that this will operate adequately. We will want to see the comparison and an explanation of why there is a difference. We want to see the whole 60 minutes. The mitigation needs to be quantified and compared.

DPS Director Tom Holder wanted to know if Dr. Cooper is opposed to a unified driveway.

Dr. Cooper responded that he has had a bad experience with this. He believes this would give him additional traffic from Dunkin Donuts which would turn his space into a parking lot for Dunkin's.

Tom Holder responds that there should be a remedy for this.

The Chairman provided an overview of the next steps moving forward. Consultant Hall will review the new information and will provide a written response and he wants Mr. Scully to write up the mitigation measures. The remaining issues which need further discussion would be landscaping.

Mr. Cassidy wants to know when his issues will be addressed. He is concerned about the water.

Tetra Tech will provide answers to the issues raised by the Cassidies in the letter from Places Associates.

Engineer Paxon responded that the water would have to travel 100 ft. to get to the Cassidy property. This will not happen.

The Chairman communicated to Mr. Cassidy that he should have his engineer at the next meeting.

Mr. Parrella responded that has not seen water down that far.

Susy Affleck-Childs will provide the letter from Tetra Tech to Mr. Cassidy.

Member Spiller-Walsh noted that some of Mr. Cassidy's concerns have been addressed in the DRC letter.

Continuation of Tri Valley Commons Public Hearing:

On a motion made by Bob Tucker and seconded by Chan Rogers, the Board voted unanimously to continue the hearing for Tri Commons to May 28, 2013 7:45 pm.

The agenda items for that evening will be to finish traffic, discuss the DRC comments, and review architecture and landscape.

ADJOURN:

On a motion made by Bob Tucker and seconded by Karyl Spiller-Walsh, the Board voted unanimously to adjourn the meeting.

The meeting adjourned at 9:28 pm.

Respectfully Submitted,


Amy Sutherland
Recording Secretary

Edited by,


Susan E. Affleck-Childs
Planning and Economic Development Coordinator

Susan Affleck-Childs

RECEIVED
MAY 08 2013

From: Hall, Michael [Michael.Hall@tetrattech.com]
Sent: Wednesday, May 08, 2013 1:59 PM
To: Susan Affleck-Childs
Cc: Thomas Holder; Pellegrri, David; Diaz, John
Subject: FW: Tri-Valley Commons
Attachments: FIG 5- Saturday Build.pdf; FIG 3- Saturday No-Build.pdf; Table1.pdf; Table2.pdf; Table3.pdf; Table4.pdf

TOWN OF MIDWAY
PLANNING BOARD

Hi Susy,

Hope all is well. I am forwarding you some additional information pertaining to the Saturday analysis that the Bill Scully sent us Monday evening. This additional information was in response to a communication I sent to him on Friday seeking clarification/updates on several items including trip generation and queuing analysis. You will find my request at the beginning of this email thread. I will be reviewing this information this afternoon.

FYI – the most important item from the list, in my opinion, is the revised queue analysis for the Saturday peak hour to be performed with the SimTraffic software. To date, Bill has no yet provided that data to Tetra Tech.

Look forward to seeing everyone tonight (except you John!)

Best,
mike

Michael J. Hall | Senior Project Manager
Direct: 508.903.2038 | Main: 508.903.2000 | Fax: 508.903.2001
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From: Bill Scully [mailto:BScully@greenintl.com]
Sent: Monday, May 06, 2013 6:39 PM
To: Hall, Michael
Cc: Pellegrri, David; Nadia Bosan
Subject: RE: Tri-Valley Commons

Mike

Sorry I didn't get to you – I had meetings when you didn't and vice-versa. I'll try and connect at some point probably tomorrow afternoon.

I am attaching two figures that are the updated figures that should have been in the Saturday report. There is not much difference. The numbers in the flow patterns reflected the trip generation but the summary block (in gray) was missed in the final review.

I am also attaching 4 tables that you requested following the initial review and the last meeting. They summarize a weekday AM/PM analysis with the project but using existing timing, the GPI plan and the plan we have ended up with (call it our "mitigation" plan if that makes it easier for you to keep track).

In regards to your question as to the ability of opposing left turn vehicles to make the turns at the same time, we had evaluated that in the past using autoturn when GPI requested us to shorten the distance between the two STOP lines on Route 109. Dave probably recalls that. Your idea of using the dots may be a good one that I am more than open to but I'm not sure at this point if we use it on 1 or both movements or none at all. I would prefer that that become a design issue that gets reviewed later following site plan. I am not authorized to begin actual design yet.

Thank you for your assistance and talk to you later.

Bill

From: Hall, Michael [<mailto:Michael.Hall@tetrattech.com>]
Sent: Friday, May 03, 2013 1:46 PM
To: Bill Scully
Cc: Pellegri, David
Subject: RE: Tri-Valley Commons

Hi Bill,
I understand your position. With regards to Monday, I'm happy to speak with you. I have meetings from 9-10 am and 1-4:30 pm. I should be free between 10 and 12 if you want to speak then.

Mike

Michael J. Hall | Senior Project Manager
Direct: 508.903.2038 | Main: 508.903.2000 | Fax: 508.903.2001
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From: Bill Scully [<mailto:BScully@greenintl.com>]
Sent: Friday, May 03, 2013 12:42 PM
To: Hall, Michael
Cc: Pellegri, David
Subject: RE: Tri-Valley Commons

Mike

Thank you for the additional questions. I'll look at them and see what I can do. I think it may be good to have a discussion of this project sometime on Monday. The level of effort on my end for getting thru planning process is getting way beyond what the Client has been thinking so I really need to balance and hopefully focus on what we can do as part of approval. But I will look at the new comments and respond somehow. I appreciate your quick heads up.

Bill

From: Hall, Michael [<mailto:Michael.Hall@tetrattech.com>]
Sent: Friday, May 03, 2013 10:31 AM
To: Bill Scully
Cc: Pellegri, David
Subject: Tri-Valley Commons
Importance: High

Hi Bill,

Hope all is well.

I have finished my initial review of your Saturday analysis and wanted to send you this off-line note. I do have a few questions, comments and clarification requests to share with you. Some of these may require submission of revised analysis or report Figures. If and when you provide us with the updated report information, please be sure to copy Suzy and John Diaz.

Thanks.

Mike

Traffic Volumes

- There appear to be differences in entering/exiting volume at the site drive between volumes reported in Table 3, Figure 5 and the synchro outputs sheets in the appendices. Please clarify which is correct and ensure that all three are consistent.
- Figure 5 should show the cars turning left from the site drive into the cross-connection to Gould's Plaza. It appears that this should be 86 vph.
- Figure 3 appears to have an error for the traffic volume turning right into Gould's Plaza. Appears the number should be 83 not 39.

Traffic Analysis – Site Drive

- Does the analysis of the signalized site drive intersection include factors on the WB approach for grades? We cannot tell from the outputs.
- SimTraffic queue results reported in Table 8 are based on simulations that assumed the SimTraffic default settings for seeding and recording times (3 min and 10 min). SimTraffic results for queues should be based on either 3 or 5 minute seeding time and 60 minute recording time. This will allow us to better understand what the queues on Route 109 and the site drive will be at the end of the peak hour.
- Have you confirmed that the concurrent left turns into the site and Dunkin Donuts can pass each other safely (i.e., have you check with auto turns that cars turning into each drive do not track into the on-coming vehicle's path)? You should consider installation of skip-dash lines through the intersection to guide drivers making both left turns.

Traffic Analysis – Holliston Street

- Please clarify why the Build condition analysis reverts to the existing phasing scheme while the No-Build analysis uses the proposed GPI phasing scheme. Is this mitigation? We would prefer that the Build analysis show the impacts of the project by using the same phasing as the No-Build condition. You can then present your preferred phasing scheme as mitigation. This is essentially the same comment we made on the AM & PM analyses.
- SimTraffic results for queues should be based on either 3 or 5 minute seeding time and 60 minute recording times.

Traffic Analysis – Medway Commons

- Please clarify why the Build condition analysis shows a lead/lag phasing scheme while the Existing and No-Build analysis are analyzed with just lead left turn phases. Is this mitigation? We would prefer that the Build analysis show the impacts of the project by using the same phasing as the No-Build condition. You can then present your preferred phasing scheme as mitigation.
- SimTraffic results for queues should be based on either 3 or 5 minute seeding time and 60 minute recording times.

Michael J. Hall | Senior Project Manager

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TOWN OF MEDWAY
BUILDING DEPARTMENT
155 VILLAGE STREET
MEDWAY MASSACHUSETTS
PHONE 508-533-3253
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jemidy@townofmedway.org

May 6, 2013

RECEIVED
MAY 06 2013

TOWN OF MEDWAY
PLANNING BOARD

David Cassidy
42 Ellis Street
Medway, MA

Re: Tri-Valley Commons

Dear Mr. Cassidy:

I am in receipt of your letter regarding the above referenced location. You have asked for an opinion whether the proposed retaining wall could be classified as a structure according to the zoning by-laws. The definition of structure states that "anything constructed or erected at a fixed location on the ground to give support or to provide shelter". In my opinion, this definition does not apply to retaining walls or similar structures requiring the minimum setback requirements.

You have the right of appeal as stated in section III D(1).

Please contact me if you have any questions.

Respectfully,

John F. Emidy C.B.O.
Building Commissioner
Zoning Enforcement Officer

JFE

Cc: ZBA, Planning, file

Mayer, Antonellis, Jachowicz & Haranas, LLP

Attorneys at Law

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William H. Mayer
Robert P. Jachowicz
Joseph M. Antonellis
Peter J. Haranas
Meghan C. Thorp

Of Counsel: Jack K. Merrill

April 29, 2013

Mr. Andy Rodenhiser
Chairman, Medway Planning Board
Town of Medway
155 Village Street
Medway, MA 02053

RECEIVED
MAY 02 2013

TOWN OF MEDWAY
PLANNING BOARD

RE: Site Issues

Dear Chairman Rodenhiser:

As you know, this office represents the developer of the proposed Tri Valley Commons. At the most recent Planning Board hearing, my client was provided a copy of the abutting property owner's (Cassidy) engineer's report "the Places Report"). As has been the practice throughout the process of this hearing, my client has responded to various questions and comments raised by the Town's consulting engineer (Tetra Tech) and the Town's consulting planning coordinator (GRC Consulting).

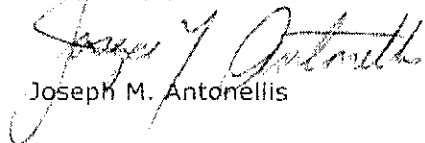
With respect to the Places Report, my client does not intend to respond to the line by line items set forth in that letter. We are taking this position for the following reasons:

1) The Places Report refers to a set of plans that have been significantly modified since their original submission. It is not practical for us to respond to comments that have been previously addressed by the applicant in response to the suggestions and recommendations of Tetra Tech and GLC. 2) My client and the entire development team have reviewed the Places Report and we were all "surprised" that the report's author failed to review the revised plans and the Tetra Tech and GRC reports. 3) The Places Report contains suggested mitigation measures (nets) that are clearly outside of the application process.

It is our position that the concerns about the Cassidy site, while certainly a topic of discussion at the Public hearing do not in and of themselves give rise for a further statement by or on behalf of the applicant. The Cassidy family has every right to hire their own engineer, and they have every right to express their concerns; however the Applicant's obligation is to submit plans for review by the town's consultants and to meet those requirements imposed by the Board's rules and regulations, all of which seek to insure the safety, convenience and welfare of all of the inhabitants of Medway.

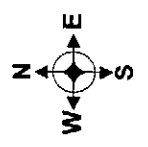
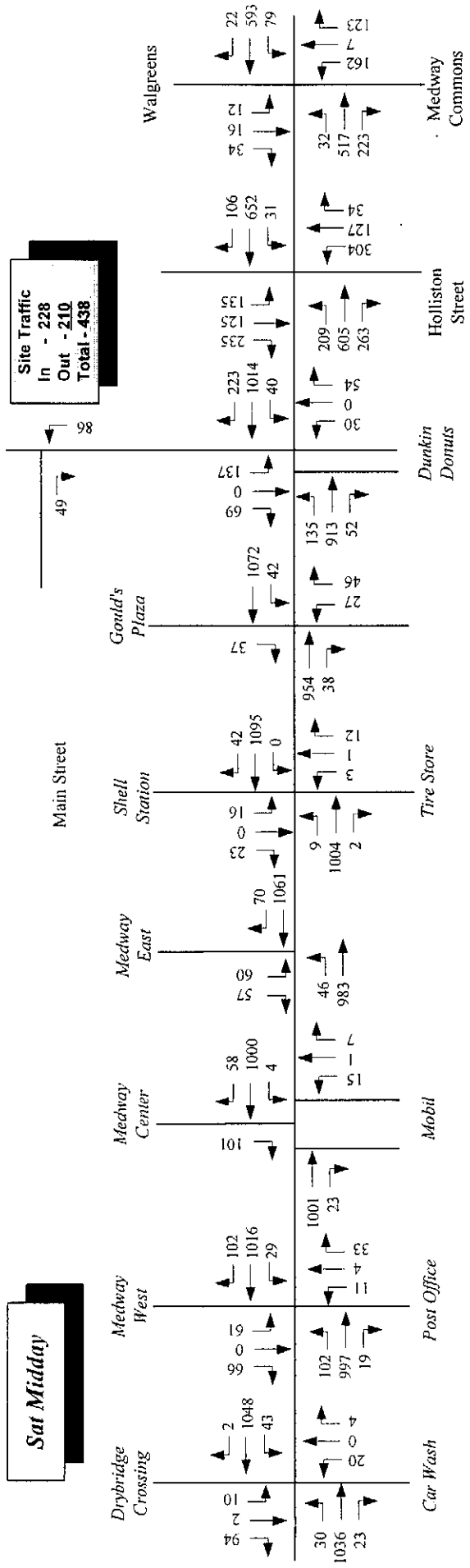
To the extent that you and the Board believe that it is our obligation to respond to the Places Report, then we would respectfully request the opportunity to have further discussion at the hearing scheduled for May 8, 2013.

Very truly yours

A handwritten signature in cursive script, appearing to read "Joseph M. Antonellis".

Joseph M. Antonellis

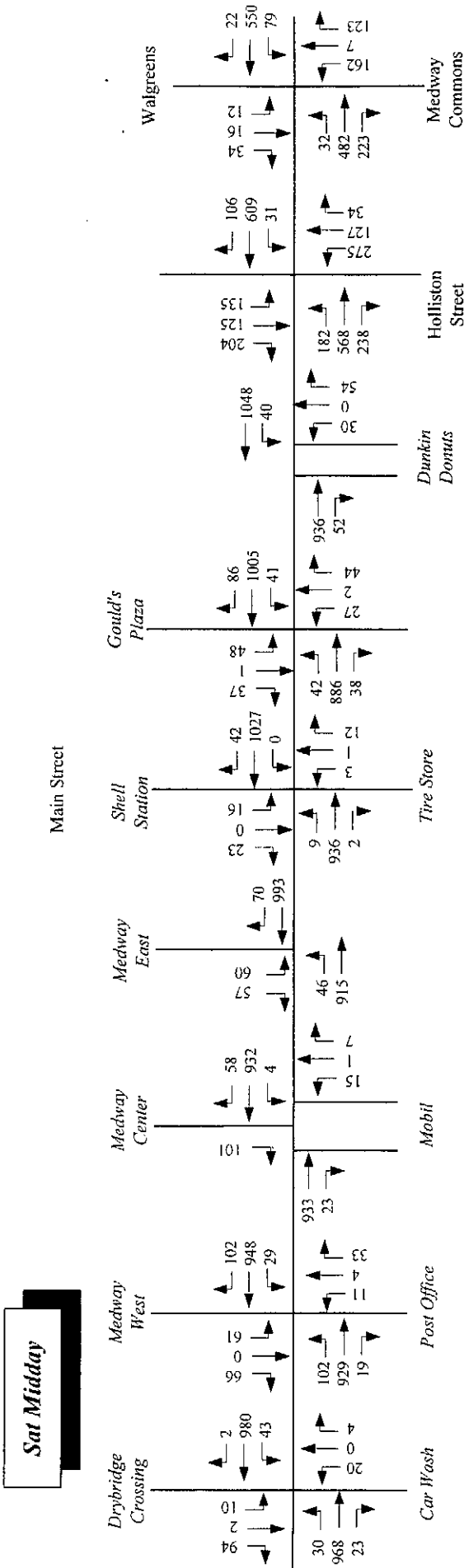
**Proposed Tri Valley Commons
Commercial Development
Medway, Massachusetts**



**Estimated Future Build
Traffic Volume Network
Figure 5**

Not to Scale

**Proposed Tri Valley Commons
Commercial Development
Medway, Massachusetts**



**Estimated Future No-Build
Traffic Volume Networks
Figure 3**

Not to Scale

**TABLE 1
SUMMARY OF LEVEL OF SERVICE
BUILD CONDITIONS FOR AM PEAK HOUR**

	Existing Timing			GPI Design Timing			Green Build Timing		
	v/c	Delay	LOS	v/c	Delay	LOS	v/c	Delay	LOS
<i>Medway West Drive/Post Office</i>									
Northbound Left/Thru/Right	-	-	-	-	-	-	-	-	-
Southbound Left/Thru/Right	-	-	-	-	-	-	-	-	-
Eastbound Left	-	-	-	-	-	-	-	-	-
Eastbound Thru/Right	-	-	-	-	-	-	-	-	-
Westbound Left	-	-	-	-	-	-	-	-	-
Westbound Thru/Right	-	-	-	-	-	-	-	-	-
Overall	-	-	-	-	-	-	-	-	-
<i>Main Street at Holliston Street</i>									
Northbound Left	1.79	423.1	F	0.85	37.5	D	0.75	37.5	D
Northbound Thru/Right	1.48	281.1	F	0.77	38.3	D	0.63	43.1	D
Southbound Left	0.75	63.0	E	0.39	27.3	C	0.34	39.2	D
Southbound Thru	1.16	156.7	F	0.72	41.6	D	0.61	52.1	D
Southbound Right	0.08	30.1	C	0.09	24.9	C	0.09	39.5	D
Eastbound Left	0.70	39.7	D	0.42	10.8	C	0.42	12.3	B
Eastbound Thru	0.65	23.2	C	0.86	30.6	D	0.80	27.7	C
Eastbound Right	0.11	0.1	A	0.14	17.9	D	0.11	0.1	A
Westbound Left	0.26	45.5	D	0.09	28.4	B	0.08	30.3	C
Westbound Thru	0.47	19.4	B	0.63	30.5	C	0.53	33.3	C
Westbound Right	0.02	0.0	A	0.02	33.6	B	0.02	0.0	A
Overall	0.86	120.2	F	0.84	35.7	D	0.77	32.2	C
<i>Medway Commons/Walgreens</i>									
Northbound Left/Thru	0.57	46.1	D	0.31	30.9	C	0.61	36.3	D
Northbound Right	0.07	40.2	D	0.07	29.2	C	0.07	28.6	C
Southbound Left	0.03	40.0	D	0.02	29.0	C	0.03	28.9	C
Southbound Thru/Right	0.01	39.9	D	0.01	28.9	C	0.01	28.5	C
Eastbound Left	0.23	53.2	D	0.21	50.0	D	0.01	3.9	A
Eastbound Thru	0.48	3.0	A	0.57	5.9	A	0.51	6.4	A
Eastbound Right	0.09	1.8	A	0.09	1.1	A	0.09	6.4	A
Westbound Left	0.52	46.3	D	0.52	42.2	D	0.12	3.6	A
Westbound Thru/Right	0.36	5.7	A	0.43	10.0	B	0.40	6.2	A
Overall	0.49	11.1	B	0.50	11.7	B	0.49	9.8	A
<i>Main Street at Tri Valley</i>									
Northbound Left/Thru/Right	0.63	84.7	F	0.47	57.6	E	0.63	86.1	F
Southbound Left	0.48	63.8	E	0.31	45.0	D	0.43	76.4	E
Southbound Thru/Right	0.05	46.3	D	0.03	38.9	D	0.04	63.2	E
Eastbound Left	0.10	6.3	A	0.13	8.5	A	0.10	7.5	A
Eastbound Thru/Right	0.77	17.1	B	0.86	24.2	C	0.72	15.7	B
Westbound Left	0.26	6.2	A	0.32	17.1	B	0.25	8.2	A
Westbound Thru/Right	0.62	6.1	A	0.69	14.8	B	0.59	9.6	A
Overall	0.71	19.4	B	0.73	23.5	C	0.67	20.7	C

**TABLE 2
SUMMARY OF LEVEL OF SERVICE
BUILD CONDITIONS FOR PM PEAK HOUR**

	Existing Timing			GPI Design Timing			Green Build Timing		
	v/c	Delay	LOS	v/c	Delay	LOS	v/c	Delay	LOS
Medway West Drive/Post Office									
Northbound Left/Thru/Right	0.24	23.1	C	0.25	43.3	D	0.12	26.0	C
Southbound Left/Thru/Right	0.39	30.9	D	0.47	46.0	D	0.25	26.9	C
Eastbound Left	0.10	12.1	B	0.23	12.0	B	0.21	8.8	A
Eastbound Thru/Right	0.45	0.0	-	0.64	12.3	B	0.61	7.9	A
Westbound Left	0.04	9.5	A	0.10	12.4	B	0.10	4.4	A
Westbound Thru/Right	0.57	0.0	-	0.82	20.9	C	0.83	13.6	B
Overall	-	-	-	0.73	18.3	B	0.75	12.1	B
Main Street at Holliston Street									
Northbound Left	1.60	352.9	F	0.80	40.6	D	0.82	52.5	D
Northbound Thru/Right	0.73	59.4	E	0.48	32.7	C	0.43	44.2	D
Southbound Left	0.82	82.2	F	0.33	25.9	C	0.38	42.8	D
Southbound Thru	1.06	127.2	F	0.72	40.3	D	0.86	73.9	E
Southbound Right	0.41	38.5	D	0.44	27.5	C	0.45	42.7	D
Eastbound Left	0.84	71.4	E	0.75	35.7	D	0.56	34.2	C
Eastbound Thru	0.61	21.8	C	0.69	24.9	C	0.56	17.1	B
Eastbound Right	0.17	0.2	A	0.18	32.7	C	0.19	11.4	B
Westbound Left	0.17	55.1	E	0.13	20.4	C	0.11	23.8	C
Westbound Thru	0.77	30.2	C	0.96	46.5	D	0.77	29.6	C
Westbound Right	0.05	0.0	A	0.05	31.0	C	0.06	10.7	B
Overall	0.91	66.5	E	0.89	35.1	D	0.74	33.4	C
Medway Commons/Walgreens									
Northbound Left/Thru	0.59	48.7	D	0.45	30.7	C	0.71	63.2	E
Northbound Right	0.05	42.0	D	0.05	27.6	C	0.05	48.6	D
Southbound Thru/Right	0.04	42.3	D	0.05	27.8	C	0.06	49.2	D
Eastbound Left	0.39	44.0	D	0.29	62.3	E	0.01	1.9	A
Eastbound Thru	0.49	26.7	C	0.58	8.8	A	0.42	4.4	A
Eastbound Right	0.12	67.9	E	0.13	0.7	A	0.12	4.1	A
Westbound Left	0.61	57.0	E	0.63	44.9	D	0.16	4.0	A
Westbound Thru/Right	0.56	10.7	B	0.65	14.9	B	0.51	7.4	A
Overall	0.56	28.9	C	0.62	15.3	B	0.54	12.6	B
Main Street at Tri Valley									
Northbound Left	0.46	64.6	E	-	-	-	-	-	-
Northbound Right	0.02	6.8	A	-	-	-	-	-	-
Northbound Left/Thru/Right	-	-	-	0.3	43.9	D	0.31	62.6	E
Southbound Left	0.83	74.8	E	0.74	48.8	D	0.85	82.0	F
Southbound Thru/Right	0.05	46.9	D	0.05	34.1	C	0.05	51.0	D
Eastbound Left	0.44	25.5	C	0.41	38.6	D	0.41	25.8	C
Eastbound Thru/Right	0.60	13.2	B	0.69	16.3	B	0.59	14.0	B
Westbound Left	0.05	5.4	A	0.06	14.1	B	0.05	7.5	A
Westbound Thru/Right	0.91	18.5	B	1.05	57.0	E	0.90	22.7	C
Overall	0.90	22.7	C	0.95	40.5	D	0.82	26.6	C

TABLE 3
SUMMARY OF ESTIMATED PEAK HOUR QUEUES
BUILD CONDITIONS FOR AM PEAK HOUR

	Existing Timing		GPI Design Timing		Green Build Timing	
	SimTraffic (FT)		SimTraffic (FT)		SimTraffic (FT)	
	Average	95th	Average	95th	Average	95th
Medway West Drive/Post Office						
Northbound Left/Thru/Right	-	-	-	-	-	-
Southbound Left/Thru/Right	-	-	-	-	-	-
Southbound Left/Thru	-	-	-	-	-	-
Eastbound Left	-	-	-	-	-	-
Eastbound Thru/Right	-	-	-	-	-	-
Westbound Left	-	-	-	-	-	-
Westbound Thru/Right	-	-	-	-	-	-
Main Street at Holliston Street						
Northbound Left	445	511	151	293	230	426
Northbound Thru/Right	312	459	158	267	228	343
Southbound Left	89	195	44	87	74	142
Southbound Thru	362	663	123	217	255	475
Southbound Right	124	256	56	119	87	194
Eastbound Left	111	203	92	212	65	151
Eastbound Thru	267	480	351	643	296	628
Eastbound Right	37	170	42	186	25	132
Westbound Left	10	37	14	84	9	58
Westbound Thru	148	239	171	312	56	109
Westbound Right	1	11	3	29	103	195
Medway Commons/Walgreens						
Northbound Left/Thru	77	98	50	92	47	89
Northbound Right	53	65	32	62	33	68
Southbound Left	12	12	4	19	4	21
Southbound Thru/Right	16	21	6	27	7	30
Eastbound Left	19	13	4	17	1	9
Eastbound Thru	78	112	167	364	93	201
Eastbound Right	26	31	36	141	21	65
Westbound Left	76	76	40	77	22	49
Westbound Thru/Right	70	76	83	158	43	94
Main Street at Tri Valley						
Northbound Left/Thru/Right	47	66	213	591	46	63
Southbound Left	31	68	37	78	45	88
Southbound Thru/Right	13	38	13	38	14	45
Eastbound Left	16	42	26	76	24	68
Eastbound Thru/Right	103	146	129	152	94	186
Westbound Left	36	69	38	78	36	75
Westbound Thru/Right	33	93	117	204	138	375

TABLE 4
SUMMARY OF ESTIMATED PEAK HOUR QUEUES
BUILD CONDITIONS FOR PM PEAK HOUR

	Existing Timing		GPI Design Timing		Green Build Timing	
	SimTraffic (FT)		SimTraffic (FT)		SimTraffic (FT)	
	Average	95th	Average	95th	Average	95th
Medway West Drive/Post Office						
Northbound Left/Thru/Right	30	55	30	48	30	48
Southbound Left/Thru/Right	44	71	31	61	31	61
Eastbound Left	22	49	28	59	28	59
Eastbound Thru/Right	-	-	138	267	138	267
Westbound Left	18	47	23	82	23	82
Westbound Thru/Right	1	5	235	424	235	424
Main Street at Holliston Street						
Northbound Left	322	338	279	400	166	277
Northbound Thru/Right	436	551	313	585	135	264
Southbound Left	114	199	62	119	83	165
Southbound Thru	272	551	152	310	295	511
Southbound Right	147	234	123	215	171	241
Eastbound Left	154	243	98	182	129	228
Eastbound Thru	355	648	244	441	298	591
Eastbound Right	73	239	47	193	51	198
Westbound Left	43	154	37	157	36	125
Westbound Thru	352	558	590	711	490	723
Westbound Right	37	189	70	258	57	240
Medway Commons/Walgreens						
Northbound Left/Thru	72	133	110	202	94	171
Northbound Right	22	50	25	56	20	43
Southbound Thru/Right	20	53	22	59	28	64
Eastbound Left	3	17	8	29	3	16
Eastbound Thru	299	441	106	231	65	142
Eastbound Right	86	222	34	118	22	62
Westbound Left	78	129	577	1012	88	312
Westbound Thru/Right	154	232	279	343	149	278
Main Street at Tri Valley						
Northbound Left/Thru/Right	291	738	387	761	31	55
Southbound Left	156	264	127	185	135	195
Southbound Thru/Right	36	63	82	210	130	307
Eastbound Left	41	85	54	103	50	99
Eastbound Thru/Right	105	149	113	160	111	170
Westbound Left	25	76	20	70	25	80
Westbound Thru/Right	139	217	159	187	577	925

Traffic Impact & Access Study

*Proposed Tri Valley Commons Development
72 Main Street
Medway, Massachusetts*

Saturday Supplemental Analysis

Prepared for
Calarese Properties, Inc.

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April 2013



GREEN INTERNATIONAL AFFILIATES, INC.
Civil - Structural - Transportation Engineers, Westford, MA

Juli Riemenschneider, Senior Landscape Architect

Green International Affiliates

April 18, 2013

Tri Valley Commons, Medway

Draft Response to Questions Regarding Sizes of Plant Material

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Attached is a chart showing approximate sizes for the plants at various times. It is difficult to predict exactly how big each plant will be. Genetic variability, site conditions and weather all influence plant growth. The height of the trees at time of planting is the mid-range as described in the American Nursery and Landscape Association's American Standard for Nursery Stock. Growth rates are based on Manual of Woody Landscape Plants by Michael C. Dirr. Some of the growth rates are estimates, as specific feet per year were not available.

The Sugar Tyme Crabapples and Red Oak will spread in width and height. The White Spruce has an average growth rate. Its ultimate size is 60 feet tall by 20 feet wide.

The Gray Twig Dogwood and Northern Bayberry will grow in height and width and will also spread by shoots. They can develop into colonies and spread in width beyond the individual plants.

The Gray Owl Juniper is stated to grow to a three foot height by Dirr. I have planted these and have seen them grow to at least four feet. They are a cultivar of Juniper Virginiana, which is a native plant. There are taller junipers, which could have been selected, however they are derived from a Juniper chinensis, so are not considered native.

The Virginia Creeper is a fast growing vine. It will spread in both height and width.

The specified sizes at planting are based on standard practices, which relate to how likely it will be for the plant to survive transplanting and the feasibility of transporting and planting. Oaks in particular have a higher success rate if planted at a size below 3" caliper. In general, larger caliper trees take longer to recover from transplanting. Trees in the 1-3" caliper range acclimate more quickly and exhibit a faster growth rate.

TRI VALLEY COMMONS
MEDWAY, MA

PLANT MATERIAL SIZES - TRI VALLEY COMMONS AT RETAINING WALL

COMMON NAME	HEIGHT AT PLANTING		AVERAGE GROWTH RATE	APPROXIMATE HEIGHT IN 5 YEARS		APPROXIMATE HEIGHT IN 10 YEARS		MATURE SIZE
DECIDUOUS TREES								
SUGAR TYLE CRABAPPLE	9 FT		.75 FT PER YR	13 FEET		17 FEET		18 FT HT X 15 FT W
RED OAK	14 FT		2 FT PER YR	24 FEET		34 FEET		60 FT HT X 60 FT W
EVERGREEN TREES								
WHITE SPRUCE	7.5' HT.		1-1.5 FT PER YR	14 FT		20 FT		60 FT HT X 20 FT W
AMERICAN ARBORVITEA	7.5' HT.		1 FT PER YR	12 FT		16 FT		30 FT HT X 10 FT W
DECIDUOUS SHRUBS								
GRAY TWIG DOGWOOD	3.5' HT		MEDIUM/SHOOTS FAST	7 FT		10 FT		12 FT HT X 12 FT W
MYRICA PENNSYLVANICA	3.5' HT		MEDIUM/SHOOTS FAST	7 FT		9 FT		9 FT HT X 9 FT W
EVERGREEN SHRUBS/GROUND COVERS								
GRAY OWL JUNIPER	2.5 FT		MEDIUM	4 FT		4 FT		4 FT HT X 6 FT W
VINES								
VIRGINIA CREEPER	16"		6-10 FT PER YEAR	10 FT		18 FT		30 FT HT-50 FT HT

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APRIL 18, 2013



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April 22, 2013

Mr. David Cassidy
42 Ellis Street
Medway, MA 02053

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Re: Tri Valley Commons
72 Main Street, Medway, MA
Places Associates Project No. 5009

TOWN OF MEDWAY
PLANNING BOARD

Dear Mr. Cassidy,

As requested, this office has reviewed the proposed "Tri Valley Commons" plans as it relates to your abutting property owned by Freil Realty II LLC. Some of our concerns directly relate to the impact on your property while others, such as internal circulation, impact the overall functionality/feasibility of the site as currently proposed. Please note that I did not review this plan for compliance with Medway Zoning and other applicable regulations as the Town will have their own reviews by Professional Engineers and it would be redundant.

Drainage Concerns:

1. There is a detention basin on the Nagog Knoll Realty Trust property. Sheet 5 shows a directional arrow (presumably direction of flow) towards the basin. There is no outlet indicated. Where does the overflow go? Will the retaining wall in cut allow this basin to flow onto the Tri Valley site and into the wetlands?
2. The outlet to the wetlands, shown as a CMP, is not visible in the field. It is our opinion that the applicant should verify it's location and provide modeling of the hydraulic capacity in the drainage calculations. If the culvert is a hydraulic restriction, the level of ponding in the wetlands can be significantly different than the HydroCAD model would imply, potentially impacting your property.
3. There is insufficient information on the downstream conditions and capacity of the existing drainage system or whether the system is full of accumulated sediment and need of remediation.
4. There is a discrepancy between the elevations (and amount of stone) between the drainage calculations and the details provided for the detention/infiltration areas. It has been our experience as inspectors in other towns that the fill material adjacent and below the detention/infiltration areas should be clean gravel fill, similar to a Title 5 septic system in fill.
5. The drainage calculations do not show the connection between the two detention/infiltration areas at DMH -12. This should be included in the model as the combined hydrographs may change the peak rates of runoff to the wetlands and may impact pipe capacities if surcharging occurs.
6. The 24" discharge is near your property and it is recommended that clearly show a swale directing the discharge towards the wetlands and away from the property line, particularly if there is more discharge than currently shown in the calculations.
7. The underground detention/infiltration areas will recharge the majority of the site runoff within 30' of the 20' high retaining wall. This will surcharge the soils behind the wall and likely weep through the wall face. It does not appear that this volume of water has been included in the calculations.

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8. We note that there are no details for this wall and it will need to be designed and stamped by a Professional Structural Engineer. Setbacks from the face of the wall will likely require a greater setback to the 4' diameter drainage structures (catchbasins 11, 12 and 13). If the wall requires the use of a geogrid, there are strict requirements for structures permeating the grid and should be defined before the plans are approved as it could have direct impact on the location of the wall and drainage structures.
9. As noted above, three double catchbasins are adjacent to the wall at low points. Given the potential for these grates to be partially blocked by snow in the winter or blowing trash/leaves during other seasons, it is our recommendation that high capacity grates be utilized to minimize the potential for ponding adjacent to the wall.

Site Concerns:

1. The 20'+ high retaining wall is shown 2' off the property line. Typically large retaining walls require a footing or level base. Without the design plans, we cannot make a determination as to the actual offset to your property. It is our recommendation that you pursue a formal request from the Building Commissioner as to whether this wall is a "structure" and therefore subject to the same setbacks as a building. This wall is vital to support the soils, parking and buildings. Without the wall, the site development would be significantly reduced. It is noted that any wall greater than 4' is subject to the provisions of the Building Code requiring a pedestrian safe fence at the top.
2. The existing netting to protect the Tri Valley property from golf balls at the driving range is approximately 50-55' high. Many balls were observed on the Tri Valley site, indicating that some balls occasionally exceed the height of the netting. The height of the proposed walls, buildings and appurtenances will be near the maximum height of the netting.

It is strongly recommended that the Tri Valley proponent provide additional netting at the top of their wall to protect their facilities from stray golf balls. You may also want to request that the Planning and Economic Development Board make a finding that the driving range has made a reasonable effort to contain any impact from stray golf balls within their property and that because of the height of the Tri Valley Common development; they are responsible for any additional protection needed.

3. The traffic circulation on the site is very tight. This office has the following concerns regarding circulation and parking:
 - a. The northeast corner of Building D does not appear sufficient for vehicular turns. The edge of pavement scales 18' from the corner of the building. A passenger vehicle has a 15.3' inside and 25.8' outside radius and a SU-30 has 28.4' inside, 42' outside radius. This access is labeled "Fire Lane" and is not accessible by the typical fire apparatus.
 - b. It also is insufficient for delivery box trucks to serve Buildings BCD – there does not appear to be sufficient space to turn around if parking is in use, requiring the vehicle to back down the driveway.
 - c. To access the loading dock for Building F, a truck would logically enter to the northerly entrance by Building E, drive past the loading dock and back in. This driveway is marked "Do Not Enter" prohibiting this movement. This also would impede a front loaded trash removal vehicle from accessing the dumpsters.
 - d. Dumpster location for Buildings BCD also is very tight for front loaded trash vehicles.
 - e. Compact car spaces are typically allowed if they are segregated with signage from regular parking spaces. Typically, they are dispersed throughout a shopping center so that businesses have a similar mix of parking. It is noted that the compact spaces are clustered around Buildings BCD with 49 compact spaces versus 23 regular spaces (excluding HP spaces). This inequitable distribution further impacts circulation as people are more likely to ignore the signage and make the aisles tighter.

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4. The plans do not have any indication of snow storage on site.
5. The lighting plan provides full cut off lighting with shields. However, the light spillage is likely to be greater with the elevated site allowing light over the retaining walls. The photogrammetric plan does not take this into consideration.
6. No screening has been provided to shield your property from headlights from the on-grade parking behind Building B.
7. No plantings have been proposed to break up the view of the wall and buildings to minimize the visual impact to your property. It is recommended that vegetation be utilized to break up the massing of the wall and buildings on the sides and rear of the Tri Valley site as it faces your property. We also note that this wall will be to the south of your property, creating a significant area of shade/shadows on your property which may impact existing vegetation.
8. The construction and Erosion Control notes are lacking. The construction sequencing is critical in the control of sediment while the site is under construction. Mulch socks may be sufficient once the wall is constructed and stabilized but is insufficient during the grubbing and stripping of the site. It is our recommendation that you request a more detailed plan, including intermediary erosion control and temporary settling basins as is required for the Stormwater Pollution Prevention Plan (SWPPP) under the National Pollution Discharge Elimination System (NPDES) permit.
9. Plans should have provisions to protect the existing stonewall which is the common property line.
10. We note that they have extended the driveway to your property. It is recommended that all utilities be extended and capped at the property line if any future connection is likely. It should also be noted that you will need easements from both the Tri Valley Commons site as well as the Nagog Knoll Realty Trust if this access is to be used in the future.

If you or any of the Town Boards/Commissions have any questions regarding this review, please feel free to contact the undersigned. When you receive responses to these comments, please forward them to me for final review.

Thank you,

Places Associates, Inc.

BY: 

Susan E. Carter, P.E., LEED AP
President

Places Associates, Inc.

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Places Associates, Inc. was established in 2009 a woman-owned enterprise (WBE), multidisciplinary professional corporation in Massachusetts. Our goal is to provide a single source, professional service firm providing land use and design, permitting and construction support services as an integral part of the design team for residential, corporate, governmental, and institutional clients.

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- | | | |
|------------------------------------|-------------------------------|---|
| ◆ Property Surveys | ◆ Site Plan designs | ◆ Construction Layout |
| ◆ Baseline and Topographic Surveys | ◆ Drainage Analysis/Studies | ◆ Construction Inspections |
| ◆ Legal Descriptions | ◆ Stormwater Management Plans | ◆ Construction Specifications for Public Bids |
| ◆ Wetlands Delineation | ◆ Water/Sewer Systems | ◆ As-Built Inspections |
| ◆ Land planning | ◆ Subdivision Designs | ◆ Land Court Plans |
| ◆ Feasibility Analysis | ◆ Industrial Park Designs | ◆ Expert Testimony |
| ◆ Master Plan Development | ◆ Wetlands Replication | ◆ Permitting |

Our staff includes Registered Professional Engineers (P.E.), Landscape Architects (R.L.A.), Registered Professional Land Surveyor (P.L.S.), Title 5 Certified Soil Evaluators, and Title 5 Certified System Inspectors, and other technical support staff.

Our multidisciplinary staff works regularly with an extensive network of specialized consultants to allow us to offer a complete package of services to address any and all issues that may arise in the land development process.

Places Associates offers start to finish services from the initial survey, design and landscaping through construction as-builts and certifications.

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Places Associates, Inc. offers continuing or one-time services directly to town Boards and Departments. Services have ranged from acting town Engineer to contractual municipal consulting, to providing reviews of individual reports and plans. We have reviewed a range of projects including subdivisions; residential, commercial and industrial site plans; Comprehensive permit (40B) housing and common driveways for compliance with the regulations and with sound engineering practices. We have provided construction inspections of roadways, review of bond releases and road acceptances and review of existing drainage issues under litigation for various towns.

All members of our professional staff have served or currently serve on local, municipal volunteer boards including: Board of Selectmen, Planning Boards, Conservation Commissions, Capital Planning, Affordable Housing, By-law review Committees and others.

We believe that our staff's involvement with their hometown boards gives us the unique perspective of understanding the issues and concerns of volunteer board members as we help the Boards to evaluate projects before them. We have also worked with Boards on updates and implementation of changing technologies in their regulations and zoning by providing language clarification, specifications and a working knowledge of the changes happening in other municipalities.

- Town of Stow, MA- Engineering consultant to Planning Board, Zoning Board of Appeals, Conservation Commission and Land Use Task Force
- Town of Boxborough, MA- Engineering Consultant to Planning Board and Zoning Board of Appeals
- Town of Carlisle, MA- Recommendations to Planning Board for Sub-division Rules and Regulations updates
- Town of Groton-Project specific engineering review of drainage
- Town of Hudson, MA - Project specific consultant to Conservation Commission for plan review
- Town of Holden, MA - Project specific engineering plan review for Planning Board
- Town of Hubbardston, MA- Project specific engineering consultant for Planning Board
- Town of Chelmsford, MA - Solar Farm by-law

SUSAN CARTER, P.E., LEED AP
President- Places Associates, Inc.

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APR 23 2013

**TOWN OF MIDWAY
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PROFESSIONAL REGISTRATIONS:

Professional Civil Engineer -Massachusetts No. 41270
LEED AP (Leadership in Energy and Environmental Design Accredited Professional)
Massachusetts Certified Soils Evaluator SE # 341
Massachusetts Title 5 System Inspector SI# 4954

EDUCATION:

B.S., Hydrology, 1982, University of New Hampshire, cum laude

COMMUNITY SERVICE:

1996 – present: Town of Chelmsford Planning Board
2012 - present: Town of Chelmsford Community Preservation Committee
2012 – present: Oak Hill Study Committee, Chairman
2009 – 2012: Town of Chelmsford Affordable Housing Committee
2009 – 2012: Town of Chelmsford Zoning Bylaw Review Committee, Vice Chairman
2006 – 2007: North Chelmsford Water District Ad Hoc Study Committee, Chairman
2004 – 2007: Chelmsford Affordable Housing Implementation Committee, Member
1997 – 2003: Chelmsford Master Plan & By-law Committee, Vice Chairman
1997 – 2000: Board of Directors, Friends of Southwell Park, Chelmsford
1991 – 1997: Chelmsford Conservation Commission, Member, Past Chairman

PROFESSIONAL EXPERIENCE:

Places Associates, Inc. Littleton, MA Principal/President, Director of Engineering	2009 - present
PLACES Site Consultants, Inc. Holden, MA Senior Engineer/ Littleton Office Manager	2004 - 2009
David E. Ross Associates, Inc. Ayer, MA Principal, Senior Engineer, Project Manager	1990-2004
Charles A. Perkins Co., Inc. Clinton, MA Hydrologist, Site Designer and Project Manager	1982-1990

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SUSAN E. CARTER, P.E. (continued)

GENERAL BACKGROUND

As a President and Director of Engineering of Places Associates, Ms. Carter is responsible for the day to day operations and engineering at Places Associates. Ms. Carter is responsible for start-to-finish planning, design and permitting for major residential, commercial, industrial and recreational land development projects.

As the company's principal hydrologist, she is proficient in the use of computer models for drainage calculations, flood plain analysis and flood routing. Throughout her twenty-five years experience, she has acted as a liaison between clients and municipal, state and federal permitting agencies. She worked in more than 30 municipalities, giving her broad exposure to different regulations, policies and approaches to problem solving.

EXPERIENCE HIGHLIGHTS:

Ms. Carter has been the Engineering consultant for the Town of Stow since 1995 providing engineering review services to the Planning Board, Board of Appeals, Board of Selectmen and Land Use Task Force. The scope of services provided has included review of subdivisions, site plans, comprehensive permits, and common driveways for compliance with regulations and with sound engineering practices; review of bond releases and road acceptances; construction inspections of roadways; and review of existing drainage issues under litigation for the Town; evaluation of town owned properties for municipal uses as well as parcels under consideration for purchase by the town for municipal purposes for the Selectmen. Ms. Carter has assisted the Planning Board in revising current subdivision regulations and reviewing proposed revisions to zoning and other regulations. Ms. Carter has been providing similar services for the Town of Box borough since 2008.

Project Engineer for a 160 apartments Comprehensive Permit project in conjunction with a 22 lot Open Space residential subdivision in Littleton, MA. The project included a wetlands crossing, endangered species habitat, on-site waste water treatment plant (by others) and a MassDOT access permit with improvements in the right of way for sight distance improvements (by others).

Project Engineer for a non-profit housing corporation to create 8 affordable housing units in Concord, MA with on-site sewage disposal, municipal water and on a state highway.

Project Engineer for a 380 apartments, 64 town homes, multi-town project in Acton, Westford and Littleton, Massachusetts for a Comprehensive Permit project. The project features steep slopes, endangered species habitat, on-site wastewater treatment plant (by others) and water supply coordination from the Acton Water District and the Littleton Water District. Ms. Carter was instrumental in providing site design, coordination and permitting support services for this complex project.

Project Engineer for the permitting and construction of the new Littleton Police Headquarters in Littleton, MA. Project was located in the Aquifer district and involved coordination with local officials to achieve a cost effective, environmentally sensitive site design.

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SUSAN E. CARTER, P.E. (continued)

Project Engineer for the permitting and construction of a new medical office building on the Littleton and Westford town line which allowed the current business to remain local. Project required multiple variances from Zoning, Board of Health and local Wetlands by-laws from both municipalities.

Project Engineer for the construction of an 11,000 s.f. daycare facility in Littleton. The permitting process included site plan review, drainage design, MassHighway curb cut permit, variances for signs and a Sewage Disposal System design.

Project Engineer for the permitting and construction for an 8 unit residential comprehensive permit in Acton, Mass. on a small 1.3 acre site with town water and sewer.

Master planning for an abundant life facility in Littleton, MA where the presence of a state listed species of salamander encumbered much of the site.

Project Engineer for a commercial site in Littleton, MA creating outdoor storage for a fast-growing company that produces modular pre-constructed bathrooms for the hotel industry. Permits negotiated to allow greater coverage than normally allowed by Planning Board in Water Resource District to meet company's need for storage.

Project Engineer for a 44 unit residential comprehensive permit project in Bolton with on-site public water supply and wastewater treatment facilities, recreational fields and extensive wetlands. Project fully permitted but not constructed.

Consultant for the Littleton Conservation Commission reviewing complex drainage calculations in preparation for expert testimony in conjunction with an adjudicatory appeal of a commercial development.

While employed at David E. Ross Associates, Inc., Ms. Carter managed and designed a three lot industrial subdivision in Littleton, Mass. adding an additional 840,000 s.f. of warehouse space to the existing 385,000 s.f. The proposed project included reclamation as fill of over 60,000 tons of abandoned concrete products from the previous owner. Permitting included subdivision approval of over 1 mile of roadway, site plan review for the lots, special permits for the Aquifer Protection District and a Notice of Intent for extensive buffer zone work. Negotiations with Town officials allowed the developer sufficient flexibility to make the extensive reclamation of the site economically feasible.

Ms. Carter was the lead design engineer for a 110 lot residential cluster subdivision in Shirley, Mass. Project was located on a former orchard with pesticide residuals in the soil requiring removal and remediation and was in the permitting process for over 3 years. Detailed design included a soil containment area under the direction of the site LSP, complex erosion and dust control plans, detailed phased remediation plans coordinated with the development of the residential development, complex hydrological analysis and drainage design. Permitting for the site included local Subdivision Approvals, Cluster Special Permit, local Wetlands By-law Order of Conditions, Superseding Orders of Conditions, Army Corps of Engineers permits, Single Environmental Report for the Massachusetts Environmental Policy Act (MEPA), Water and Sewer Connection Permits, and an evaluation of the project by the Massachusetts Aeronautics Commission due to the proximity to the Shirley Airport.

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