

Re: Cedarhurst and Lakeview

Mon 4/20/2015 12:18 PM

**From:** Llodra, Pat  
**To:** Mary Ann Jacob  
**Cc:** Marcinek, Sue

May 13, 8AM  
Room 1



agreed..we need to have a meeting face-to-face with you, me Ron and Fred. (maybe Dave Grogins, too, if the easements are an issue). I will have Sue schedule.

E. Patricia Llodra  
First Selectman  
Town of Newtown  
3 Primrose Street  
Newtown, CT 06470

(203) 270-4201 - Office  
(203) 270-4205 - FAX

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**From:** "Mary Ann Jacob" <mjacob4404@charter.net>  
**Sent:** Monday, April 20, 2015 12:16 PM  
**To:** "pat.llodra@newtown-ct.gov" <pat.llodra@newtown-ct.gov>  
**Subject:** Re: Cedarhurst and Lakeview

I'm not sure I understand what he says will be done....

Sent from my iPhone

On Apr 20, 2015, at 11:31 AM, Llodra, Pat <pat.llodra@newtown-ct.gov> wrote:

Fred's response to my questions.

E. Patricia Llodra  
First Selectman  
Town of Newtown  
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Newtown, CT 06470

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**From:** "Hurley, Fred" <fred.hurley@newtown-ct.gov>  
**Sent:** Monday, April 20, 2015 11:27 AM  
**To:** pat.llodra@newtown-ct.gov  
**Subject:** re: Cedarhurst and Lakeview

Hi Pat,  
Good question. The answer is we have to do both. We can address greatest need to the extent possible without some of the necessary legal stuff. The triage will provide as least some relief while we prepare the more complete answer. That is the approach we are proposing for this year. Pave the first section (which will not be a big amount and we will be rolling

that into Jeremiah which will provide a very big statement) and attack what drainage we can with the money that is left. We can't do it all but we can show good faith that we are trying.  
Fred

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**From:** "Llodra, Pat" <pat.llodra@newtown-ct.gov>  
**Sent:** Monday, April 20, 2015 11:18 AM  
**To:** fred.hurley@newtown-ct.gov, "Mary Ann Jacob" <mjacob4404@charter.net>  
**Cc:** "<ron.bolmer@newtown-ct.gov>" <ron.bolmer@newtown-ct.gov>  
**Subject:** re: Cedarhurst and Lakeview

So, where do we stand? It makes sense in terms of use of the roadway and public perception that we do the most 'needy' areas first - but, I do understand that perhaps the legal issues for those more desperate sections has not been done and that we have been approaching this project in a more sequential fashion. Right? Can we refocus now or is it too complicated?

Pat

E. Patricia Llodra  
First Selectman  
Town of Newtown  
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Newtown, CT 06470

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**From:** "Hurley, Fred" <fred.hurley@newtown-ct.gov>  
**Sent:** Monday, April 20, 2015 11:13 AM  
**To:** "Mary Ann Jacob" <mjacob4404@charter.net>, "Pat Llodra" <pat.llodra@newtown-ct.gov>  
**Cc:** "<ron.bolmer@newtown-ct.gov>" <ron.bolmer@newtown-ct.gov>  
**Subject:** re: Cedarhurst and Lakeview

Hello Everyone,

The whole Lakeview Terrace project requires mapping, some land takings, some land swaps and various easements. It has taken over two years just to work out the initial piece from the legal standpoint. I sat in last Thursday as a legal witness to that process finally be consummated and even then there were minor complications. It is not a simple thing to just switch which drainage piece is done within a given year because of the above. This is going to be a very complicated issue.

Best regards,  
Fred

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**From:** "Mary Ann Jacob" <mjacob4404@charter.net>  
**Sent:** Saturday, April 18, 2015 8:53 AM  
**To:** "Pat Llodra" <pat.llodra@newtown-ct.gov>  
**Cc:** "<ron.bolmer@newtown-ct.gov>" <ron.bolmer@newtown-ct.gov>, "<fred.hurley@newtown-ct.gov>" <fred.hurley@newtown-ct.gov>  
**Subject:** Cedarhurst and Lakeview

Hi Pat,

Ron kindly offered to meet with me to discuss the road issues in both Cedarhurst and on Lakeview Terrace.

First, in Cedarhurst we are in agreement that the worst road at this time is Spring Trail, with lower Algonquin at the base of the hill a close second. I'm hopeful that they will see some attention this season. If the two was able to do the full work on Spring Trail, perhaps a thin overlay on Algonquin to hold us for a few years would make sense. I know your team is evaluating what can get done with the money allocated, so I will look forward to hearing from you on what can be done here.

Based on earlier conversations, I know you re aware the Cedarhurst Association does not have funds for road repair or repaving and since all the other private road work is paid for by the town (with the exception of Shady Rest) we believe it is inequitable to have to pay for our roads.

Second, on Lakeview Terrace....the work as planned several years ago is in the beginning stages. Trees that need to be cut are identified and road marked for work. Ron indicated that the amount for this work is about \$168,000. My concern is that the area that is earmarked is possible the BEST part of the road. I showed him the area where the deterioration is the worst and would ask you consider redirecting this years funds to that area. As we all know, residents don't appreciate the work unless the roads actually are in better shape! Please let me know if that's an option before we get too far down the path this year on Lakeview.

Thank you all for your attention to this matter,

Mary Ann

June 24, 2014

HERBERT L. COHEN  
(1928-1983)

AUSTIN K. WOLF  
RICHARD L. ALBRECHT  
JONATHAN S. BOWMAN  
IRVING J. KERN  
STEWART I. EDELSTEIN  
NEIL R. MARCUS  
G. KENNETH BERNHARD

DAVID L. GROGINS  
GRETA E. SOLOMON  
ROBIN A. KAEN  
RICHARD SLAVIN  
DANIEL S. NAGEL  
RICHARD J. DI MARCO  
DAVID B. ZABEL  
MARK A. KIRSCH  
DAVID M. LEVINE  
JOSEPH G. WALSH  
MATTHEW C. SUSMAN  
DAVID A. BALL  
JOCELYN B. HURWITZ  
STUART M. KATZ  
MONTE E. FRANK

PATRICIA C. SULLIVAN  
VINCENT M. MARINO  
JULIE D. KOHLER  
ARI J. HOFEMAN  
COURTNEY A. GEORGE  
BARBARA M. SCHELLENBERG  
RACHEL A. PENCU  
JASON A. BUCHSRAUM  
L. JOYELLE DE FELICE  
DAVID M. MOROSAN  
LAUREN G. WALTERS  
MARCIA M. ESCOBEDO  
DAVID DOBIN  
NATHAN C. ZEZULA  
PHILIP C. PIRES  
DYAN M. KOZACZKA  
ROBYN H. DRUCKER  
RACHEL A. SCHEWARTZMAN  
JORDAN L. FELDSTEIN  
SHANE R. GOODRICH  
JASON A. KLEIN

OF COUNSEL

MARTIN J. ALBERT  
PETER A. ARTURI  
ANN L. FOWLER-CRUZ  
THEMIS KLARIDES  
ROSAMOND A. KOETHER  
BRUCE L. LEVIN  
JACK E. MCGREGOR  
JOHN PATRICK C. O'BRIEN  
ALLAN J. ROSEN  
MARTIN F. WOLF

Ms. Patricia Llodra  
Newtown Municipal Center  
3 Primrose Street  
Newtown, Connecticut 06470

Re: Lakeview Terrace

Dear Pat:

I have discussed the question of the title to the Lakeview Terrace road bed with my title searcher, Rob Sibley and George Benson. Given the title question raised by the title searcher, I recommend that the Town, by its Board of Selectmen, vote to accept Lakeview Terrace as a town road (it can also be accepted in sections) pursuant to Section 13a-148 of the Connecticut General Statutes and Section 3-30(a)(6) of the Charter.

Ron Bolmer is going to have Paul Brautigam prepare compilation maps of the road to accompany the resolution of acceptance. The resolution is as follows:

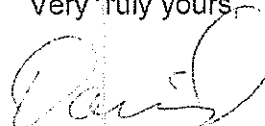
"Resolve that the Town of Newtown accept Lakeview Terrace as a town road pursuant to Section 13a-148 Connecticut General Statutes and Section 3-30(a)(6) of the Newtown Town Charter."

In the alternative, the resolution can read:

"Resolved that the Town of Newtown accept a portion of Lakeview Terrace as a town road, as more particularly shown and described on a map entitled " \_\_\_\_\_ " which map shall be recorded in the Newtown Town Clerk's Office, pursuant to Section 13a-148 Connecticut General Statutes and Section 3-30(a)(6) of the Newtown Town Charter."

As to the segments of the road which need to be widened, we should continue to obtain deeds from the abutting owner for such strips and for any additional drainage rights which may be required.

Very truly yours,

  
David L. Grogins

DLG/js

1115 BROAD STREET  
P.O. BOX 1821  
BRIDGEPORT, CT 06601-1821  
TEL: (203) 368-0211  
FAX: (203) 394-9901

158 DEER HILL AVENUE  
DANBURY, CT 06810  
TEL: (203) 792-2771  
FAX: (203) 791-8149

321 POST ROAD WEST  
WESTPORT, CT 06880  
TEL: (203) 222-1034  
FAX: (203) 227-1373

657 ORANGE CENTER ROAD  
ORANGE, CT 06477  
TEL: (203) 298-4066  
FAX: (203) 298-4068

re: Alpine Circle

Wed 10/9/2013 2:36 PM

**From:** Bolmer, Ron

**To:** Evan Grace

**Cc:** Llodra, Pat

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Evan,

Sorry for the delay in getting you the estimate for paving Alpine Circle. The estimate for this work would be around \$48,000. The material cost would be around \$27,000 and the labor cost would be \$21,000. This is assuming we can get by with a two inch overlay.

Ron Bolmer

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**From:** "Evan Grace" <evangrace@gmail.com>

**Sent:** Monday, August 12, 2013 9:49 AM

**To:** ron.bolmer@newtown-ct.gov

**Subject:** Alpine Circle

Hello Mr. Bolmer,

Thank you again for meeting with me on Thursday to discuss our neighborhood roads. You had mentioned that Monday may be a possibility to come out and take a look at Alpine Circle. If it is, please let me know. I am around for a good part of the day, but I want to make sure I don't miss you.

Thanks again.

Evan Grace

203-917-8655

re: construction at Underhill Rd. and Center St.

Wed 7/24/2013 12:41 PM

From: Llodra, Pat

To: Tricia Bobowick

Cc: Hurley, Fred, Tait, Bob, Kelsey, Chris, Marcinek, Sue

Aug 15  
1:30

~~Aug 15~~

~~1:15 Aug 15~~

Good morning Tricia.

I think it would be good for us to have a meeting at the site to better see, hear, and feel the impact of the construction work. Let's at least see what we can do on that issue as a starter. As for the taxes issue, I am copying Finance Director Bob Tait and Assessor Chris Kelsey and ask that they meet with you as well.

Note: I am copying Fred Hurley (Newtown Public Works) and ask that he involve the right person from the state DOT in the on-site discussion.

Sue: Can you arrange an on-site meeting with Tricia, me, and the others mentioned here?

E. Patricia Llodra  
First Selectman  
Town of Newtown  
3 Primrose Street  
Newtown, CT 06470

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**From:** "Tricia Bobowick" <tbobowick@gmail.com>  
**Sent:** Wednesday, July 24, 2013 11:24 AM  
**To:** pat.llodra@newtown-ct.gov  
**Subject:** construction at Underhill Rd. and Center St.

Dear Mrs. Llodra, CT Representative Bolinsky and CT Senator McKinney,

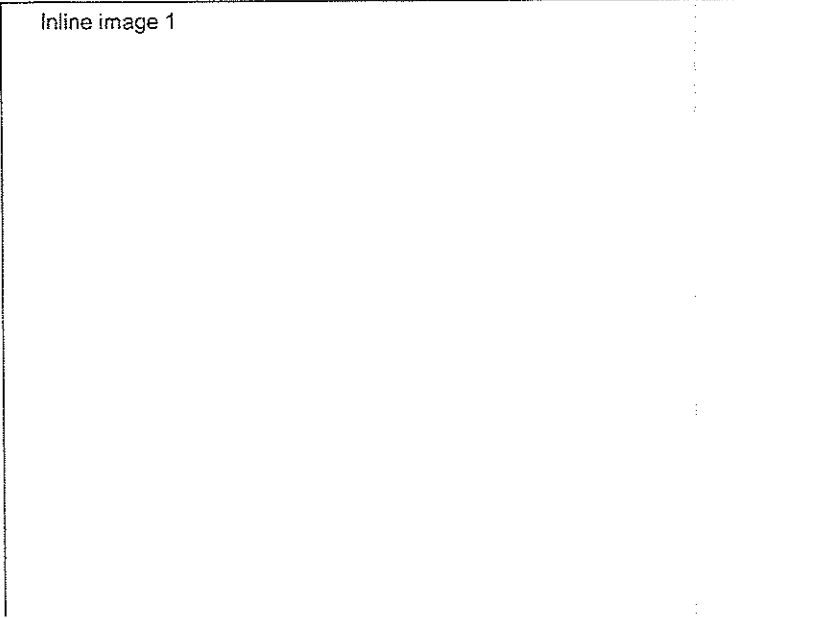
We're writing to express our great frustration with the highway construction happening right across the street from our home located at 116 Underhill Rd., Sandy Hook, CT. We are very close to route 84 and the underpass that is being worked on; located at Center Street and Underhill Rd. From the top of our driveway to the construction site is approximately 50 feet. Please see pictures for reference attached. We understand that this construction is supposed to be happening for two years and we are not sure how families so close to the actual work site are supposed to actually sleep with the noise continuing all night long. We are a family with two elementary school children, a 7 and 10 year old and we're very concerned on how these noises will affect their sleep (please see video attached to hear the noises). We wonder if there is a noise ordinance that needs to be adhered to and if so a sound barrier should be put in place to make sure it is followed. We have tried to grin and bear the constant trucks going back and forth all day, bright lights glaring into our children's rooms all night long; concrete dust covering our cars every morning. And our road closed with a detour that now adds 5 more minutes to our commute down a very narrow road, only safe enough for one car. We have now reached our limit however when combining this with our tax increase of 40% or \$3,000 a year due to our waterfront reassessment. We have already expressed our great concern and displeasure to the town as to why this just is not equitable and were told the time to appeal has passed for 2013. At the original appeal hearing we were reassured this over-valuation would be taken care of that they understood there was a problem with waterfront. Obviously, we had no idea of what the increase in our mill rate would be until June 1 or we would have spoken up more instead of trusting. Perhaps when our home was assessed someone should have looked at the condition of the surrounding property controlled by the town and state

besides just the water. With this construction now starting this month full force we feel the inequity of this situation is glaring. To be paying a %40 increase in our taxes, but to have no comfort in our home for the most of basic things such as sleeping is beyond unfair. We understand that it is a state construction and that there are state laws that limit Newtown as to how they can adjust a reassessment after a certain date. We think something needs to be done though in this situation as our property is in a unique position and the nightly construction just started earlier this month. We welcome you to our home, to see and hear for yourselves what we'll be living with until this same time in 2015. I have been a resident of Sandy Hook my whole life and my husband most of his. We have always loved our town but now we are finding ourselves feeling helpless and frustrated. We look forward to speaking to you about this situation.

Sincerely,

Derek and Tricia Bobrowick

Inline image 1



Top of our driveway to the construction site

re: FW: Road drainage issue on waterview dr.

Sat 8/3/2013 4:03 PM

From: Llodra, Pat

To: Cynthia Palkimas

Cc: Marcinek, Sue, Hurley, Fred, Bolmer, Ron

8/15/13

8-45 AM  
1:30 pm

Good afternoon Cynthia.

Thank you for attaching the photos - very compelling evidence. I am copying Fred Hurley and Ron Bolmer. We will schedule to meet with you on site as soon as a date/time can be arranged. Sue Marcinek of this office will connect with you to set that date.

Same time as Underhill  
appt. w/ Bobowick

Cynthia  
(203) 910-4020

E. Patricia Llodra  
First Selectman  
Town of Newtown  
3 Primrose Street  
Newtown, CT 06470

(203) 270-4201 - Office  
(203) 270-4205 - FAX

From: "Cynthia Palkimas" <cindylake8@charter.net>  
Sent: Saturday, August 03, 2013 12:44 PM  
To: pat.llodra@newtown-ct.gov  
Subject: FW: Road drainage issue on waterview dr.

----- Begin forwarded message -----  
Subject: Road drainage issue on waterview dr.  
Date: 8/3/13 12:07:04 PM  
From: "Cynthia Palkimas"  
To: cindylake8@charter.net

3 houses  
away from  
underhill

Dear Pat,

I am writing to you because I have a great concern that due to the lack of properly spaced drainage basins on waterview Dr. most of the rain water from the road is diverted, because of the pitch in the road, directly through my yard. I have attached pictures showing the water traveling through my yard which is putting a great deal of pressure on engineered retaining walls that I invested a great deal of money in and are now being compromised by this river flowing through my yard. Also, tearing up the grass on that side of the yard and the pounding of the water creating holes in the lawn. The lower level wall is visibly being pushed out.

As a taxpayer whose taxes have increased by a third in the first half of this year (with one months notice), I feel as though I have spent much hard earned money to build my home and I try my best to maintain that value. I feel it is the towns obligation to maintain these water front property roads so that we can maintain



the value of our homes based on what you (the town) have assessed them at.

I am concerned that our little waterfront village (Underhill and Waterview Dr.), in addition to being hit with a significant tax increase, then is not given equal attention as many other areas in this town are. I am the local U.P.S. driver and it is frustrating to drive the area daily seeing neighborhoods whose roads are being unnecessarily re paved/replaced storm drains etc. while my road continues to be neglected at the expense of my property.

With drainage being the first concern on my list, and one which I hope we can come up with a solution for quickly, I also have other concerns.

The obvious being there is a known "Drug house" (hotel/motel at the end of Underhill rd.). Although we have expressed our concerns of our safety and the safety of children in our neighborhood, were told we need to do the policing ourselves. There was a meeting held where it was explained to us how to keep our neighborhood safe without police support. Now there is bridge work going on with two police officers, one at each end of the construction site, monitoring the area for the safety of the highway workers. Yet it is not worthy to spend the time or money on keeping our neighborhood drug free. Along with this there is the construction noise that will be going on for two years. I believe this is being addressed and will keep this short. All in all our quiet little neighborhood properties are diminishing in value while our taxes are increasing to levels that are becoming unmanageable for many of us financially. Our neighborhood deserves the same attention as Horseshoe Ridge area homeowners. I look forward to hearing back from you as well as coming up with resolutions for these issues.

Thank you for your time,

Sincerely,

Cynthia A. Palkimas

8 Waterview Dr.

Sandy Hook, Ct. 06482

Please feel free to contact me at 203-910-4020

Town Roads Condition

Tue 7/2/2013 9:05 PM

From: Evan Grace

To: first.selectman@newtown-ct.gov

Hello Ms. Llodra,

My name is Evan Grace and I am a resident on Alpine Drive in Sandy Hook. I wanted to thank you for all you have done for Newtown over the past few years. While I have only been a resident in town for a little over 2 years, my wife and I continue to be impressed and proud of your leadership.

I spoke with the highway department about the condition of our local streets. We have crumbling roads on Alpine Drive, Alpine Circle, Bancroft road, parts of Hole Bridge, and all of the side streets off of Alpine Drive. Many of the drains are crumbling as well. They said that unless I was just calling about fixing pot holes, that's all they could do. I have spoken with many of the local resident in the area, some who have lived here over 10 years, and they said the streets in this part of town have always been this poor. The highway department said that I should put together a petition for new roads and send it to your office. I am writing you to see if this is a necessary step in replacement process of our roads.

I greatly appreciate you assistance.

All the best,

Evan Grace

fw: I don't want to be one of those complainers...

Wed 5/29/2013 9:12 AM  
From: Marcinek, Susan  
To: Llodra, Pat

I'll print it for the Fred file. Private Road, don't know how you buy on a private road and subsequently find out it's private. Also, according to our calculator on the home page, his tax increase is in the \$900 range.

*Sue Marchek  
Executive Assistant  
Office of the First Selectman  
3 Primrose Street  
Newtown, CT 06470*

*(203) 270-4203  
(203) 270-4205 FAX*

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**From:** "Ian Crooks" <iafte@gmail.com>  
**Sent:** Wednesday, May 29, 2013 8:58 AM  
**To:** first.selectman@newtown-ct.gov  
**Subject:** I don't want to be one of those complainers...

Dear Ms. Llodra,

I'm usually the last person to send off letters of complaint but I feel strongly enough about this issue that I must make my voice heard. I moved to 6 Wiley Lane, an unpaved cul-de-sac, back in April of 2011. I subsequently found out that this road is a "private" road, which means it's maintained by the Town but will not be improved upon unless the residents pay for it themselves. The Town plows our road in winter and several times a year, regrades the lower section. Herein lies the issue, and, therefore, the complaint.

The lower section of the road is sloped and there is no drainage along the sides. As such, a heavy rain will create huge ruts along the edges of the road, effectively narrowing it to a single track (The attached photo gives a view of the road looking up the hill although you can't fully appreciate the depth of the ruts, unfortunately). Additionally, there is a catch basin at the bottom of road that eventually fills up with the detritus washed down the slope and we end up with a large pond. The Town clears this drain a few times a year too. When the Town maintains the road, they do an excellent job; regrading the surface, digging out the catch basin, etc.. However, it's obviously a temporary fix and the road soon reverts to it's primal state (e.g. the latest regrading lasted about two weeks). This is frustrating mainly because it's a complete waste of Town resources and the residents of Wiley Lane get to test their driving skills and/or suspensions if two cars ever meet. It would be less expensive long term to dig a drainage ditch along one side of the road and grade it such that it slopes towards the ditch. An even better idea would be to pave the lower section in addition to creating proper drainage conditions such that there is nothing left to wash out.

But this is the Catch-22. Doing so would be considered "improving the road," even though it would save taxpayers' money so we end up "maintaining" the road at greater expense. At this point, I'll throw in the usual rant: My property taxes are slated to increase by \$1100 dollars (~12%!) annually with the new budget. I don't mind paying taxes if they're used responsibly, but stuff like this seems to be a waste. So, my question to you is, is there any way the "improvements" can be made so the folly of the temporary fixes isn't repeated ad infinitum?

I realize you're very busy, but I invite you to swing by and take a look for yourself to get a better understanding of the situation. I look forward to hearing your opinion. Thank you for your time.

Ian Crooks  
6 Wiley Lane



**Attachments:**

- Image.jpeg

# Graded Earth Versus Stabilized Bituminous Roads— A Cost Analysis

**GARY A. TRETSCH**  
Director of Engineering,  
Cashin Associates, P.C.,  
Brewster, New York

THERE has been an ongoing debate in many rural municipalities over the use and maintenance of dirt/earth roads. For the most part the two sides of the debate evolve around the esthetics and rural characteristics vs. maintenance and expenses. Generally you have the Town Fathers taking the side of the vocal minority in favor of dirt/earth roads and the Highway Department preferring to upgrade the roads to a stabilized macadam or similar surface treatment.

The town of Kent in Putnam County, New York, recently focused on the heart of the issue and took an objective view of the facts and figures as they apply to the debate.

At the request of the Town Board, Cashin Associates analyzed the long term (15-year) costs associated with maintaining the existing graded earth surface of Miller Hill Road as compared to improving the surface treatment to a stabilized bituminous road and maintaining the paved surface during the 15-year period.

The existing 5820-ft-long graded earth road has an average width of 18 ft, a parabolic cross section, and minimal drainage improvements. Miller Hill Road is primarily a rural residential travelled way servicing approximately 24 homes. The majority of the homes are situated at the most northerly end. In addition to the residential use, the road services a complex know as "Madden Outdoor Educational Center," which also is located near the northerly limit of the road.

Besides privately owned vehicles, Miller Hill Road must provide access to maintenance vehicles, emergency vehicles, service vehicles, school buses, and the traffic generated by the BOCES complex, which serves approximately 15,000 children per year.

## Maintaining a Graded Earth Road

Graded earth roads are often considered the first stage of construction and maintained as earth roads only until funds are available for further improvement. During this stage the first and foremost maintenance obligation is to keep the road surface smooth. Generally, motor grading subsequent to each serious rainfall will provide this condition. The second most important need of a graded

earth road is the control of erosion. Appropriate drainage swales, diversion ditches, and drainage discharge points are required for this effort. This work is generally accomplished by hand labor and/or small machine activity. The third consideration in maintenance of graded earth roads, particularly during the dry summer months, is a dust alleviation program. This can be accommodated by applications of calcium chloride or water

as conditions warrant and the local budget permits.

In general, graded earth roads such as Miller Hill Road are considered low-class roads and only called upon to service light traffic.

## Graded Earth Road Analysis

The operation and maintenance costs associated with a graded earth road include the following:

Table 1—Motor Grading Cost Estimate

Item	Quantity	Hours	Unit Price Hourly Rate	Amount
Motor Grader	1 EA	6	\$60.00	\$360.00
Rake Truck	1 EA	6	20.00	120.00
10 Wheel Dump Truck	1 EA	6	50.00	300.00
6 Wheel Dump Truck	1 EA	6	40.00	240.00
Equipment Operator	2 EA	6	20.12	241.44
Vehicle Operator	2 EA	6	18.16	217.92
Laborer	1 EA	6	18.16	108.96
Foreman	1 EA	6	20.20	121.20
Crushed Stone	100 Ton	N/A	12.20	<u>1,220.00</u>
Total				\$2,929.52

Table 2—Spring Thaw Estimate

Item	Quantity	Hours	Unit Price Hourly Rate	Amount
Backhoe	1 EA	12	\$40.00	\$480.00
10 Wheel Dump Truck	1 EA	12	50.00	600.00
6 Wheel Dump Truck	2 EA	12	40.00	960.00
Equipment Operator	2 EA	12	20.12	482.88
Vehicle Operator	2 EA	12	18.16	435.84
Foreman	1 EA	12	20.20	242.40
Crushed Stone	500 Ton	N/A	12.20	<u>6,100.00</u>
Total				\$9,301.12

Table 3—Winter Maintenance Estimate

Item	Quantity	Hours	Unit Price Hourly Price	Amount
6 Wheel Dump Truck	1 EA	2	\$40.00	\$80.00
Equipment Operator	1 EA	2	20.12	40.24
Vehicle Operator	1 EA	2	18.16	36.32
Sand/Salt	8 CY	N/A	21.75	<u>174.00</u>
Total				\$330.56

Table 4—Cold Mix Asphalt Paving Estimate

Item	Quantity	Unit Price	Amount
Stabilization Fabric	1600 LF	\$5.62	\$8,992.00
Crushed Stone	533 CY	12.20	6,502.60
Calcium Chloride	930 GAL	1.25	1,162.50
3-in. Cold Mix Asphalt with 1/4-in. Chip Coat*	11,640 SY	5.40	<u>62,856.00</u>
Total			\$79,513.10

\*Includes Materials and Labor

- Motor grading, subsequent to the spring thaw, subsequent to each heavy rain, and/or at least once per month during the spring, summer, and fall months.

- Replacement of surface materials with a crushed stone type mix subsequent to the spring thaw to bind the road cross section.

- Extra sand/salting during winter months as compared to paved road surfaces due to the frost penetration.

- Maintaining drainage swales, diversion ditches, and outlets, generally by hand or with small equipment at similar intervals as motor grading.

Table 1 shows that the cost for motor grading Miller Hill Road per event is approximately \$3,000. As previously noted, the motor grading should be and is accomplished approximately six times during the spring, summer, and fall months. The work is performed generally on a once-a-month basis. This activity to maintain a smooth surface is estimated to cost \$18,000 per year.

Spring thaw activity generally occurs once to one-and-a-half times per year. This frequency is accounted for in the cost estimate presented in Table 2. Therefore the estimated cost for spring thaw maintenance is \$9,300 per year.

The winter maintenance estimate, Table 3, accounts for two additional sand/salt applications per storm event beyond what a paved road requires. This is necessary as the initial applications of sand/salt refreeze due to the depth of frost in an earth road.

On average, it is conservatively estimated that the Town Highway Department responds to six storm events per year. Therefore the cost to the town for extra winter maintenance amounts to \$1,980.

Roadside maintenance for erosion control and drainage is accomplished during the motor grading and spring thaw activities. Consequently, no additional cost is allocated.

In summary, the annual cost to the town for maintaining Miller Hill Road as a graded earth road is \$18,000 for motor grading; \$9,300 for spring thaw activity; and an additional \$1,980 for winter maintenance, totalling \$29,280.

### **Stabilized Bituminous Road Analysis**

Before we can estimate the cost of maintaining Miller Hill Road as a stabilized bituminous road, we must compute the cost of improvements to upgrade the existing graded earth traveled way. It has been proposed that the appropriate surface treatment for Miller Hill Road would be "moto-paving" with cold mix asphalt. This treatment will not only provide a stabilized all-weather wearing surface but will esthetically present a more rural or country appearance than a conventional asphalt or blacktop road.

The specifications for a moto-paved road include placement of a compacted 6-in. crushed stone base, upon which a compacted 3-in. moto-paving application of  $\frac{3}{8}$ -in.,  $\frac{1}{2}$ -in., and  $\frac{3}{4}$ -in. stone with asphalt emulsion is placed. A  $\frac{1}{8}$ -in. chip topcoat is then spread to blot the surface and give a gravel road appearance. Approximately six weeks subsequent to this treatment, or when the moto-paving has set up, a  $\frac{1}{8}$ -in. chip seal coat is applied as a permanent wearing surface. This also adds to the gravel road appearance. The estimated costs for cold mix asphalt paving on Miller Hill Road is \$79,513 as computed in Table 4.

As the 15-year comparison clock runs on the stabilized moto-paved road, a resealing of the top coat would be required at five-year intervals to maintain the integrity of the road surface. A  $\frac{3}{8}$ -in. chip seal coat would be applied every five years. The cost of each reapplication is estimated at approximately \$20,000. Therefore over the 15-year comparison period, the required maintenance would amount to \$60,000.

With a new stabilized paved surface there would be no additional maintenance other than routine activities that would be required for both paved and unpaved roads such as trimming, cleaning, sanding, and snow plowing. These items were omitted from the cost estimates since they would be similar and cancel each other out.

To project an annual maintenance cost for the stabilized paved road the following would need to be accounted for: the initial construction cost of \$79,513 and a 15-year maintenance cost of \$60,000 for a total of \$139,513. Therefore, over a 15-year period the annual cost of the stabilized bituminous is \$9,301.

### **Conclusion**

In summary, Cashin Associates has determined that the annual cost for maintaining Miller Hill Road as a graded earth road is \$29,280, as compared to an annual cost of \$9,302 to maintain Miller Hill Road as a stabilized bituminous road, including initial construction costs.

As a result, an analysis of the data clearly indicates what most highway people have always believed. Macadam surface roads, even when initial construction costs are included, are far less expensive to maintain than graded earth roads. The study concluded that a graded earth road costs approximately \$26,500 per mile per year to maintain while a macadam road (including initial construction costs) approximately \$8,500 per mile per year.

In conclusion, the cost of maintaining Miller Hill Road as a graded earth road will cost the town \$19,978 more per year than constructing and maintaining it as a stabilized bituminous road. This annual savings equates to \$299,670 over the 15-year comparison period. □□□