

# An Engineer's Assessment of Our Roads

Prepared by Debra Paros, July 25 - August 9, 2014

## Introduction

On July 24, 2014 Debra Paros showed Quin Clements several sections of our SMCA roads. Quin is a principal and vice president at Davido Consulting Group, an engineering firm offering expertise in civil, structural, and land use issues. As a home owner on Whidbey Island Quin relates to our situation of being responsible for our own road maintenance and restoration costs, because he too lives on a private road. Luckily it rained hard the prior 24-hours and the resulting standing water provided obvious indicators of specific problem areas. Other problem areas were also shown to Quin for his evaluation; these areas were documented previously on a CD through photographs, descriptions, and a road system diagram. Quin walked from the end of Snowberry Lane to Grasser Hill Rd and from the intersection of Sky Meadows and Sky Crest to the entrance at Libbey Rd. This report lists all of Quin's comments which were both of a general nature i.e. statements/advice/recommendations that would apply to all similar problem areas/conditions as well as uniquely specific recommendations.

Text printed in red is reserved for all road repairs recommended for completion in 1-2 years and actions/steps that we need to take now. Italicized words are used as operational terms with specific meaning and application.

Do not take comments out of context; always look to see what the outline hierarchy is for any comment. For example, the comment --*The maximum area recommended by the engineer to dig out is ~ 3,745 sq ft* – does not refer to several areas, but rather to one area on Sky Meadows Drive near the entrance. This comment's location is B.1.b.3). Given what is stated in B., we know that *The maximum area...* refers to *the entrance to our neighborhood* and not to our entire road system.

## Conclusions

- 1) The roads in our neighborhood are well-designed for drainage and runoff, but
- 2) there are a few small areas where the grading should be corrected at the time any repairs to the asphalt are made in the future (See below for elaboration, SBFE).
- 3) "Do not apply an overlay until much later." The condition of our asphalt is surprisingly good given its age (Most roads need a 2-in overlay of new asphalt to restore them after 25 years due to oxidation and loss of plasticizer.) but
- 4) there is one contiguous area that should be repaired in 1-2 years (SBFE).
- 5) There are other smaller areas that will need to be repaired in the future when they become a bigger problem; these areas where there is cracking, settling, depression formation, and mild alligating do not require anything at this time (SBFE).
- 6) The cracks near the intersection of Grasser Hill Rd and Sky Crest Dr need to be filled now with *emulsified asphalt*. (SBFE).
- 7) Any areas holding water (~4 in or larger in diameter) need to be kept free of silt, needles, dirt, and debris in order to slow the process of water intrusion into the asphalt (SBFE).
- 8) Our HOA will need to develop a fund to cover the costs of asphalt repairs. We will need a small amount (\$250.00?) ASAP for application of emulsified asphalt in two or more areas; ~\$5,000.00 to repair the entrance area and possibly 1-2 small patches; and ongoing accumulation of funds for future repairs.

## Early Repair Projects, Procedures, Processes, Asphalt Specifications, Contractors

- A. Areas where there are simple, single-ray cracks should be immediately filled in with an emulsified asphalt. This is a procedure that should only be done by a contractor with experience using such products and not by home owners. If the crack remains exposed to water, the seepage will continue to destroy the underlying base of the road. Eventually depressions in the asphalt will form and a network of cracking. If this happens then a major dig out and refill and overlay is needed. To avoid this and to postpone any major repairs, get the crack sealed.
1. There are at least two areas in the neighborhood that need this ASAP:
    - a. A crack that crosses the width of Grasser Hill Rd near its intersection with Sky Crest.
      - 1) Quin sees signs that this crack might be related to a nearby utility trench He thinks some work was probably done on that trench which resulted in the crack formation.
    - b. A crack radiating out into Sky Crest near the mailboxes at Grasser Hill Rd.
    - c. We should determine any other cracks in other locations to get filled at the same time.
    - d. We need to contact professionals who do this work and get a bid. Once all the cracks have been identified then I will calculate a total number of linear feet to be referred to when getting the bid.
- B. The one area we should repair this year or next year is at the entrance to our neighborhood.
1. Cracks, alligating, and depressions are numerous throughout the beginning section of Sky Meadows Drive.
    - a. The engineer can see telltale signs suggesting that when the subdivision was first developed, an asphalt apron was poured at the entrance to intersect with Libbey Rd. Sometime later the rest of the road was covered in asphalt. Now, this apron area is degrading. Possible reasons include: base layers and grading ill-prepared, stress from heavy equipment during the development phase.
    - b. Quin's recommendation is to dig out one contiguous area, rebuild the base, fill with asphalt and add an overlay.
      - 1) Though roads can be fixed/restored with a series of patches, he feels it would be easier to fix this area as well as make it look better if we dig out one large area to include all the major degraded sections.
      - 2) We will need to discuss with our asphalt contractors how they plan to treat the interfaces between this new area and the road above it, and Libbey Rd below it, in order to assure an impervious seal and a pleasing appearance.
      - 3) The maximum area recommended by the engineer to dig out is ~ 3,745 sq ft. However, there are valid arguments for reducing this area either ~504 sq ft or 819 sq ft, making the total square footage at 3,241 or 2,926. Why? – It all depends on where we draw the line. The worse areas are concentrated within the smallest area of choice. By increasing the area we include parts of the road that have mild or early stage deterioration. If the difference in cost is significant then we might want to limit the work to the smallest area and hope that the rate of deterioration is slow. After all, there will be other areas throughout the road system that will eventually need dig out. If the difference in cost is small, such as 0-10%, then we may want to chose the maximum area.
        - a.) Use these values strategically when getting bids from asphalt contractors.
        - b.) The SMCA Roads Committee will have to indicate with a paint stroke these three different lines.

- c.) When asphalt contractors come out to look at the area and bid on the project, then they should also measure it with a measuring wheel to get a more accurate figure for total square feet. I am considering buying one.
- d.) Quin was quite confident that this project should only cost us \$5,000.00 total. I suggest that we not mention this amount up front when we ask for bids. We can always use it as a negotiating point later once we decide who we prefer to work with.

C. Here are some issues and guidelines for dig out areas.

1. Thickness of asphalt. Regarding areas earmarked for future dig-out (not due to grading problems but rather due to degradation of base layers and alligating at surface), I asked how thick the asphalt need be and Quin's reply was emphatically "Two inches."
2. Fill layers. He added: "There are all sorts of roadway construction combinations used but one we typically see is 6 inches of *crushed surfacing base course* (gravel), 2 inches of *crushed surfacing top course* (gravel) and 2 inches of asphalt."
  - a. This combination would result in the dig out area being sealed to and flush with the surrounding road surfaces, thus creating what is referred to as a *patch*.
3. Patches. Quinn later emailed me answers to some questions and said, "The *patch* itself can be a standalone fix without the overlay meaning that once the gravel is placed asphalt is then laid to finish the *patch*. Additional *overlay* can occur any time after the *patch* is complete." In other words, overlay on a patch is optional.

D. Overlay vs. Chip seal. Though the county uses *chip seal* to repair roads, this is most likely not going to be a choice for our neighborhood. There are several reasons for this. We probably won't even be able to find a private contractor who does this. Secondly, we probably won't want to go that route because it is a process that will only buy us a short period of renewal before we have to fix the road again. The county chooses to use *chip seal* because they don't always have the funds for *overlay* and it does allow them to fix more problems with their limited budget. Also, they have an operation that is set up to apply chip seal efficiently and economically. It buys them time, but only five years. In comparison, *overlay*, costing 3-5x more money, provides 15-20 years of restoration.

E. Do not use *overlay* alone to correct *grading* problems. *Grading* problems should only be corrected by first doing a dig-out and reforming the base followed by a 2 in overlay.

F. Do not overlay before fixing the problems underneath. Anywhere you overlay over alligating or a depression and the base is not repaired, then the cracking will soon extend up through the new layer of overlay.

G. "Oil slurry/chip slurry: what do you have to say about it for road repair?" He replied, "You don't want that...that is used for parking lots."

H. Quin's opinion/experience: Asphalt contractors--because their work is hands-on all the time--they are able to give you product- and process- recommendations for a given application.

I. One contractor can do/will do all steps required from dig out to patch completion to overlay.

- J. Best time of year to have road work done. If we have areas in need of overlay or areas of overlay and areas in need of dig out, then the best time for applying overlay is August and September.
1. A typical scenario: 1<sup>st</sup> the dig out work is done and that area filled to create a *patch*. 2<sup>nd</sup> two weeks later, a 2-inch overlay is applied to the areas needing overlay as well as to the patches.
  2. In other words, if we are having larger areas covered with 2 in of overlay, then we can have some or all of the patches also covered with overlay at that time.
    - a. Factors determining which patches receive an overlay: integrity of the patch; proximity to other areas scheduled for overlay; size; appearance; proximity to utility trench, etc.

### Further Observations and Recommendations from the Engineer

At the dog-leg of Snowberry Lane. The asphalt in this area appears to have been poured at different times. The condition of the road looks typical of roads that have base failure due to migration of substrate. The section of asphalt along Shellenbarger's property does not need to be dug out nor repaired. On the other side, along Anderson's property, the asphalt looks somewhat in worse condition, but it also is not in need of any repairs. These sections of the road are not yet *raveling* i.e. not yet losing *binder* due to water seeping through the asphalt. He feels that cyclic maintenance should be practiced to postpone the inevitable extreme damage. The drain area of Snowberry is "not yet terrible," according to the engineer. He further added, "Eventually a tear out will be needed and at that time you should do a re-grade in this area." He felt that the road was doing its job in terms of draining water effectively. The engineer concluded that Snowberry Lane was actually well-designed with regard to both dimensions.

Sections of both roads along the Piercy property. A small depression near the driveway was holding water. A pile of fine tree debris was allowing this puddle to persist and to hold more water than it would otherwise. Quin said that dirt and debris from trees should be regularly swept off all the roads in order to slow the rate of asphalt deterioration. He felt that this small depression could be due to a tree root. "Do not just put down an overlay here to repair this depression; it would have to be dug out first and then repaired." The engineer looked closely at the condition of Sky Crest along the Piercy property. He felt it showed only mild degradation. However, there is a small area that is "pretty bad" right at the end of the tree row near the stable yard; this area needs a *dig out* and then a *patch*. He recommended doing that work at a later time when there are other areas that also need a dig out and patch. **The Roads Committee might include this work in any bids from contractors, unless the Board decides not to have this area included with the repairs at the entrance. I have not measured this small, "pretty bad" area.**

Sky Meadows Dr along Good's property. There are areas here where there is standing water: in the middle of the lane closest to Good's and also along the center line of the road. Quin underscored that this water leads to problems. However, he said there is nothing he'd recommend to do at the moment; "wait until something goes wrong before you do the dig out here". When a dig out is done then the grade problem in this area should be fixed.

Various patches and depressions. The engineer was not sure what caused the depression near Hollywood's driveway, but it is an area requiring dig out in the future. He recommended the size of the patch to extend ~2 ft beyond the uphill side of the depression. The patch near Bledsoe's driveway might have been due to a utility trench issue, but the patch seems to be preventing damage to the base layer. This patch might need to be dug out in the future, but it is fine for now.

Libbey Rd. I asked if the substrate layer at our entrance might be getting water intrusion from Libbey Rd. He felt that was unlikely and hard to prove, though there is a crack along the interface. Quin believes our damage resides mostly in the apron asphalt of the initial subdivision development.

### **History of Referrals**

In March I contacted the director of a national asphalt commission which I found online. He referred me to my regional TIB. Early in April I spoke with the TIB representative for our area about our roads and whether we could get any support from the state. The answer was no, because of our location outside of town. He did think that it might be worthwhile trying to find some national funding given our status inside a national reserve. He also recommended that I contact the Coupeville City Engineer who owns a private asphalt road company. Later in April I interviewed the City Engineer for 45 minutes. I wrote reports on the comments made by all of these engineers. The City Engineer recommended that I contact the engineering firm DAVID-O for any further needs. I communicated by phone, email, and voice mail every month from late April through August with Quin Clements of David-O Consulting Group, Inc., Phone: 360-331-4131; Cell 360-914-0772; FAX: 360-331-5131; E-mail: quin@dcgenr.com; P.O. Box 1132 Freeland, WA 98249 <http://www.dcgengr.com>. I wish to be the lead contact person from our community regarding communications with this engineer. It is important that we do not abuse the privilege of his gracious assessment of our roads by taking up his time further without actually hiring him.

Crack & Patch Asphalt Quality Sealer 4sep2014

Ref: Asphalt Quality Sealers

Work to be completed will consist of :

Patching:

Saw cut out damaged asphalt .

Patch and repair with 3" hot asphalt.

Compact and seal edges

Approx 3859sq ft

Price for labor and materials .....\$15,436.00+ Tax

Crack Seal:

Fill cracks with rubberized material

1930 linear ft

Price for labor and materials.....\$1,930.00 + Tax

Respectfully Submitted

Wes Fann

Owner

Note:

Subsequent conversation between Wes Fann and Jim Cline – Wes acknowledged he (or his wife) made a decimal point error. (Should be 193 linear ft rather than 1930 linear feet).

Mons,

I don't have a bid. My last conversation with Wes was that he was going to check why the first bid was so high with 1930 linear feet. Have not heard back. I think we should propose to him that he fill the cracks we have identified and also walk the roads with him prior to beginning the filling process to mark which crack need filling. Even with the additional cracks in my amended survey it should not exceed \$500.00.

Jim. 22 September 2014

---

**From:** Debra Paros [mailto:[dmparos@comcast.net](mailto:dmparos@comcast.net)]  
**Sent:** Tuesday, September 23, 2014 11:09 AM  
**To:** 'Mons Hoyrup'  
**Cc:** 'Jim Cline'; 'Robert Vernon'  
**Subject:** scraping debris from road edges

Please consider and respond to the following issues about scraping.

1. Someone should do a trial run to see if this actually does work before proposing it to the board or trying to find others to participate.
2. I'm trying to think of what might go wrong—such as—I would not like to see several inches of exposed dirt beyond the edge of the road. In other words, once the grass or top layer is sloughed off the yard area then home owners will have to reseed, prep to reseed, etc. If not then weeds will immediately move in.
3. I have also noticed in some areas there is a zone of embedded gravel with grass growing on top of this zone.
  - A. I don't think homeowners would appreciate if this gravel and stones get scraped up all along the perimeter of their property into the yard area where they mow.
  - B. If this process of scraping of the asphalt margins of the roads does scrape into the yard area, then in a couple years you might see even worse over growth at the margins due to the weeds that move in.
4. Not all the road experts agreed on the necessity of the scraping.
5. No one has actually pointed to existing damage caused by this debris.
6. And not too long ago when we discussed through email on the necessity of scraping I got the impression that one or more of you didn't think it was such a good idea after all.
7. Scraping is obviously not an emergency nor something that must be done this week.
  - A. It is not necessary prior to the crack filling work.
  - B. I think it should only be a done a few months prior to any major work such as an overlay.
  - C. It is not needed for the entrance repairs because the entrance will be a dig out.
8. A more proactive approach to dealing with this encroachment of debris onto the margins of our roads is to do the following:
  - A. Invest in a implement to attach to more than one of our community tractors that can used annually to clean back debris and deposits.
    1. Price?--\$1,000?—2,000?
    2. Possibly this implement will not require any scraping prior to its use as a method to keep things clean on a regular basis.
    3. If “scraping”-action is necessary, then each home owner would be responsible for cutting back/shoveling out by hand any encroaching growth/debris from their own property

Thanks,

Debra Paros







# LAKESIDE INDUSTRIES, INC.

ACCT./ADMIN. OFFICE: P.O. BOX 7016 ISSAQUAH, WA 98027  
"AN EQUAL OPPORTUNITY EMPLOYER"

PROPOSAL/CONTRACT AGREEMENT  
(425) 313-2600

Anacortes Division - P.O. Box 729 Anacortes, WA 98221 (360) 293-2168 Fax: (360) 293-9784

Date: September 3, 2014

## CONTRACTING PARTY

### JOB NO.

Skymeadows HOA C/O Jim Cline  
650 Skymeadow Drive  
Coupeville, WA 98239  
360-682-5253

### LOCATION & TYPE OF WORK:

ASPHALT REPAIRS/ OVERLAY

ENTRANCE REPAIRS  
SKYMEADOW DRIVE  
COUPEVILLE, WA

Bid Item	Approximate Quantity	Unit of Measure	Description	Unit Price	Total Price
			<b>Entrance Repairs/ Overlay</b>		
	900.00	S.F.	Grind existing failed asphalt to required depths		
			Grind 2" transition joints at Libbey Road		
			Inspect and prepare subgrade as needed		
			Replace 2" Class B Asphalt		
	2,930.00	S.F.	Sweep and prepare existing asphalt		
			Place 2" Class B Asphalt Overlay	Lump Sum	\$ 13,600.00
	14,905.00	S.Y	<b>Budgetary Cost Estimate for HMA Overlay</b>		
			Sweep and prepare existing asphalt for overlay		
			Apply Tack Coat		
	1,300.00	TONS	Place 1.5" Class B Asphalt Overlay	\$ 89.50	\$ 116,350.00
	22.00	HRS	Traffic Control ( 2 Flaggers, Vehicle, & Signage)	\$ 125.00	\$ 2,750.00
			<b>Includes One Mobilization</b>		
<b>APPROXIMATE TOTAL (Plus sales tax where applicable)</b>					<b>Plus 8.7 % Sales Tax</b>
Total price to be based on actual quantity or measurement unless otherwise specified.					

**Exclusions:** Bonding, Survey, Engineering, Permitting, & Sales Tax.

**Notes:** Only work SPECIFICALLY outlined is included in this quotation. Lakeside Industries to have full access to all scheduled work areas.

Lakeside's proposed prices herein assume that Lakeside's work hereunder will be substantially complete on or before: 10/30/2014.

Unless Contracting Party has signed and returned this Agreement within thirty (30) calendar days of the date first stated above, Lakeside's proposal shall be null and void.

CONTRACTING PARTY'S SIGNATURE ON ONE COPY RETURNED TO LAKESIDE INDUSTRIES, INC. WILL RENDER THIS A LEGAL CONTRACT FOR THE PERFORMANCE OF THE ABOVE WORK. CONTRACTING PARTY'S SIGNATURE ALSO ACKNOWLEDGES RECEIPT OF LAKESIDE'S 'NOTICE TO CUSTOMER' STATEMENT ATTACHED HERETO.

APPROVED BY CONTRACTING PARTY:

LAKESIDE INDUSTRIES, INC.  
WA. CONTRACTOR'S REG. LAKESI\*274JD  
OR. CCB 108542

BY: \_\_\_\_\_

BY: \_\_\_\_\_

TITLE: \_\_\_\_\_

TITLE: Shaun M. Billerbeck/ Estimator/ Project Manager

**SUBJECT TO THE ATTACHED GENERAL PROVISIONS**

## General Provisions

**1. DEFINITIONS.** As used herein, (i) "Contractor" shall mean Lakeside Industries, Inc. or any division thereof; (ii) "Contracting Party" shall mean the person or entity purchasing materials and/or services as set forth on the front page hereof and pursuant to these General Provisions; and (iii) "Agreement" shall mean the contract formed between Contractor and Contracting Party by Contracting Party's acceptance of those terms and conditions set forth on the front page hereof and these General Provisions and/or materials and/or services provided to Contracting Party by Contractor.

**2. ACCEPTANCE.** Unless Contracting Party has signed and returned this Agreement to Contractor within thirty (30) calendar days of the date first stated on the front page hereof, Contractor's proposal shall be null and void. Contractor hereby objects to any conflicting, additional and/or different terms contained in any proposal or other writing issued by Contracting Party for purposes of accepting the proposal set forth herein and the same shall not become a part of this Agreement unless agreed upon in writing by Contractor and Contracting Party.

**3. COST ESCALATION FOR ASPHALT.** Contractor's proposal herein is based upon local vendor posted prices for liquid asphalt as of the date of Contractor's proposal. In the event the actual prices exceed such posted prices, the Contract Price shall be equitably adjusted by change order to reflect such increase. Contractor reserves the right to terminate this Agreement if an equitable adjustment cannot be agreed upon by Contracting Party and Contractor. Payment for any such adjustment shall be made in accordance with the terms and conditions of this Agreement.

**4. CREDIT VERIFICATION.** This Agreement is subject to Contractor's verification of Contracting Party's credit and Contractor's determination that such credit is adequate or satisfactory to Contractor. Contractor reserves the right to withdraw its proposal should Contractor reasonably determine that such credit verification is unsatisfactory or inadequate.

**5. TERMS OF PAYMENT.** Unless otherwise provided for herein, payment shall be due to Contractor within ten (10) days of the date of any invoice issued by Contractor to Contracting Party. Interest shall accrue on all overdue invoices at the rate of 1-1/2% per month (18.00% per annum) or the highest rate allowed by law.

**6. SCHEDULE.** This Agreement is subject to Contractor's review and approval of Contracting Party's schedule. Contracting Party shall coordinate other contractors' and subcontractors' work to prevent any delay or interference with Contractor's work.

**7. CHANGES.** Contracting Party, without invalidating the Agreement, may order changes in the scope of the work provided for by this Agreement, with the cost of the work and the time to complete such work being adjusted accordingly. Such changes in the work shall be authorized only by written change order signed by Contracting Party and Contractor.

**8. PROPERTY LINES.** Contracting Party warrants that Contracting Party knows the actual location of all legal property lines and that Contracting Party, prior to commencement of work hereunder, shall place stakes clearly indicating such property lines.

**9. PERMITS.** Any permits that must be secured prior to commencement of the work hereunder shall be secured and paid for by Contracting Party.

**10. DELAYS.** If Contractor is delayed at any time in the commencement or progress of the work by any act or neglect of Contracting Party, or by any employee or agent of Contracting Party, or by any separate contractor employed by Contracting Party, or by changes ordered in the work by Contracting Party, or by labor disputes, fire, abnormal adverse weather conditions, force majeure, unusual delay in transportation, fuel, material, or labor shortages or unavailability, action or inaction of public authorities not arising out of the fault of Contractor, casualties or any other causes beyond Contractor's reasonable control, then the Contract Time shall be extended by change order for a period of time reasonably necessary to alleviate the effect of such events on Contractor. Delays beyond Contractor's reasonable control shall be compensable to Contractor and such equitable adjustment of the Contract Price shall be made by change order. Contractor reserves the right to terminate this Agreement if an equitable adjustment cannot be agreed upon by Contracting Party and Contractor. Payment for any such adjustment shall be made in accordance with the terms and conditions of this Agreement.

**11. HAZARDOUS SUBSTANCES.** Contracting Party agrees to indemnify, defend and hold harmless Contractor and its employees and subcontractors from liability related to the existence of hazardous substances at the project site, unless such liability results directly from hazardous substances brought on to the project site by Contractor or its subcontractors or arises out of the negligence or wrongful act of Contractor or its subcontractors. If Contractor encounters a substance on the project site which Contractor believes is a

hazardous substance, Contractor shall immediately notify Contracting Party and shall cease work in whole or in part and any delays (and costs arising therefrom) shall be Contracting Party's responsibility.

**12. TERMINATION FOR CAUSE.** Contractor has the right to terminate this Agreement if Contracting Party fails to comply with any of the other provisions herein; provided, further, Contractor may terminate this Agreement in the event of the happening of any of the following: (a) insolvency of Contracting Party or Contractor; (b) any act of bankruptcy by Contracting Party under any provision of the Federal Bankruptcy Act or filing by Contracting Party of a voluntary petition under any law providing for relief from the claims of creditors; (c) the filing of an involuntary petition to have Contracting Party adjudicated as bankrupt under the Federal Bankruptcy Act or for reorganization of Contracting Party under that Act or under any law providing for relief from the claims of creditors which is not vacated within thirty (30) days from the date of such filing; (d) the appointment of a receiver or trustee for Contracting Party or Contractor which is not vacated within thirty (30) days from the date of such appointment; (e) the execution by Contracting Party or Contractor of an assignment for the benefit of creditors; or (f) any other event occurring which under the applicable law would entitle Contractor to cancel and terminate this Agreement. Such termination shall not prejudice any claims that either party may have against the other.

**13. INDEMNITY.** To the fullest extent permitted by law, Contractor shall indemnify and hold harmless Contracting Party from and against claims, damages, losses and expenses, including but not limited to attorneys' fees, arising out of or resulting from performance of the work hereunder, provided that such claim, damage, loss or expense is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property, including loss of use resulting therefrom, but only to the extent caused by negligent acts or omissions of Contractor, a subcontractor, anyone directly or indirectly employed by them or anyone for whose acts they may be liable. Contracting Party shall indemnify and hold harmless Contractor from and against claims, damages, losses and expenses, including but not limited to attorneys' fees, to the extent caused by negligent acts or omissions of Contracting Party, or anyone directly or indirectly employed by it or anyone for whose acts it may be liable.

**14. WARRANTIES.** Contractor warrants and guarantees all work and/or materials provided under this Agreement shall be of good quality and workmanship, free from faults and defects and in conformance with this Agreement. Contractor further agrees to make good, at its own expense, any defect in materials or workmanship which may appear within one (1) year of Contractor's substantial completion of its work hereunder. Except as otherwise provided herein, Contractor makes no warranties or representations of any kind, express or implied (including no warranty of merchantability or fitness for a particular purpose) and none shall be implied by law. Contracting Party agrees that oral agreements, statements and representations made by Contractor, its employees or its agents shall not constitute a warranty of any kind.

**15. TIME LIMITATION ON CLAIMS.** Any action arising out of Contracting Party's purchase of materials or Contractor's provision of services to Contracting Party, including any action arising under this Agreement, must be commenced within one (1) year after substantial completion of Contractor's work hereunder, and no such action may be maintained which is not commenced within such one-year period.

**16. LIMITATION OF LIABILITY.** Contractor's sole liability and Contracting Party's sole and exclusive remedy for any and all damages, special, direct, incidental or consequential, sustained by Contracting Party or others arising of Contractor's performance of this Agreement shall be limited to correcting defective work. In no event shall Contractor be liable to Contracting Party or any third party for more than the amount of Contractor's proposal, or for any delay damages.

Under no circumstances shall Contractor be liable for (i) damage to or breakage of underground pipes and/or conduits and cables not visible from the surface of the ground nor for any damage to approaches (including sidewalks) from the street to the property line; (ii) damage to the completed pavement surface due to the action of petroleum product spillage; (iii) subgrade failure or utility ditch failure; or (iv) growth of horsetail weed, morning glory, deep-rooted ferns or perennials subsequent to the application of soil sterilization (weed killer) that have not reached maturity prior to such application. Any soil sterilization provided for in this Agreement shall be applied at the rate specified by the manufacturer thereof.

**17. DISPUTE RESOLUTION/ATTORNEYS' FEES.** Contracting Party and Contractor agree that all claims, collections, disputes, or other controversies arising under this Agreement or related hereto, shall be settled by and subject to litigation, or at the sole choice of the contractor, binding arbitration with a

single arbitrator pursuant to the Construction Industry Arbitration Rules of the American Arbitration Association ("AAA"). Any such arbitration shall be commenced by the Contractor delivering a written demand for arbitration to the AAA, and a copy of such demand shall be delivered to the Contracting Party. Contracting Party and Contractor agree that the location of any such arbitration proceeding shall be at the Seattle, Washington AAA office. Any arbitration award by the arbitrator shall be final and binding on the parties and subject to confirmation and reduction to judgment pursuant to RCW 7.04 in the King County Superior Court. In any such litigation or arbitration, the prevailing party shall be entitled to its reasonable attorneys' fees and costs.

**18. GOVERNING LAW.** This Agreement shall be governed by and construed in accordance with the laws of the State of Washington.

**19. SEVERABILITY.** In the event that any paragraph, part, term, or condition of this Agreement is construed or held to be void, invalid or unenforceable by an arbitrator or court of competent jurisdiction, the remaining paragraphs, parts, terms and conditions of this Agreement shall not be affected and shall remain in full force and effect.

**20. VOLUNTARY CONTRACT.** Each of the parties to this Agreement has carefully read and fully understands the terms and conditions hereof, has had

full opportunity to consult with legal counsel regarding its meaning and effect, and is entering into this Agreement freely and voluntarily, through a representative who is fully authorized and empowered to sign on its behalf.

**21. ENTIRE AGREEMENT.** Contracting Party and Contractor intend that the proposal and those terms and conditions on the front page hereof and these General Provisions shall constitute the final, complete and exclusive Agreement between the parties. This Agreement supersedes all other prior or contemporaneous agreements, representations, understandings and promises, oral and/or written, by or between the parties with respect to the subject matter hereof. Contracting Party further acknowledges and agrees that in entering into this Agreement, Contracting Party has not and is not relying upon any contemporaneous agreements, representations, understandings and promises, oral and/or written, made by Contractor. No course of dealings between the parties shall be relevant or admissible to explain, supplement or vary the terms of this Agreement. No amendment or modification of this Agreement shall be effective or binding upon the parties unless made in writing and executed by Contracting Party and Contractor.

### State of Washington

### NOTICE TO CUSTOMER(RCW 18.27.114)

Lakeside Industries, Inc. is registered with the State of Washington, Registration No. LAKESI\*274JD, and has posted with the state a bond or deposit of \$12,000 for the purpose of satisfying claims against Lakeside Industries for breach of contract including negligent or improper work in the conduct of Lakeside Industries' business. The expiration date of Lakeside Industries' registration is July 31st.

### THIS BOND OR DEPOSIT MIGHT NOT BE SUFFICIENT TO COVER A CLAIM THAT MIGHT ARISE FROM THE WORK DONE UNDER YOUR CONTRACT.

This bond or deposit is not for your exclusive use because it covers all work performed by Lakeside Industries. The bond or deposit is intended to pay valid claims up to \$12,000 that you and other customers, suppliers, subcontractors, or taxing authorities may have.

### FOR GREATER PROTECTION YOU MAY WITHHOLD A PERCENTAGE OF YOUR CONTRACT.

You may withhold a contractually defined percentage of your construction contract as retainage for a stated period of time to provide protection to you and help insure that your project will be completed as required by your contract.

### YOUR PROPERTY MAY BE LIENED.

If a supplier of materials used in your construction project or an employee or subcontractor of Lakeside Industries, Inc. or its subcontractors is not paid, your property may be liened to force payment and you could pay twice for the same work.

### FOR ADDITIONAL PROTECTION, YOU MAY REQUEST LAKESIDE INDUSTRIES, INC. TO PROVIDE YOU WITH ORIGINAL "LIEN RELEASE" DOCUMENTS FROM EACH SUPPLIER OR SUBCONTRACTOR ON YOUR PROJECT.

Lakeside Industries, Inc. is required to provide you with further information about lien release documents if you request it. General information is also available from the state Department of Labor and Industries.

## Road Committee Consolidated Report 24 Sept 2014

This report is a summary of SMCA road issues and solutions for repair, renovation and maintenance. There are multiple pages to this report.

1. Road Committee Finding and Recommendations Summary by MHoyrup 19 Sept 2014
2. REPORT OF THE ROAD COMMITTEE JClint 19 Sept 2014
3. Repair and Slurry Seal cost analysis BVernon Sept 2014
4. Scraping debris road edges Kurt Gordon From Debra Paros 23 September 2014
5. Recommendations from Kurt Gordon on Overlay vs. Chip Seal vs. Slurry Seal for Entire Road System plus Two Options for Entrance and Sky Meadows Drive, by Debra Paros 24 Sept 2014

Road Committee Finding and Recommendations Summary by MHoyrup 19 Sept 2014

Road Properties:

Two 11 ft lanes

Sky Meadows: 0.50 miles, 2640 ft, 58,080 sq ft, 6453 sq yds

Sky Crest: 0.49 miles, 2587 ft, 56,914 sq ft, 6331 sq yds

Snowberry: 0.15 miles, 792 ft, 17,424 sq ft, 1936 sq yds.

3 cul-de-sacs, 3 tee intersections, 200 sq yds additional.

Total asphalt area, 14,920 sq yds.

Asphalt quantities (150 lb/cu ft):

1 ½ - inch overlay: 168 lb/sq yd, 1258 Tons total

2 – inch overlay: 225 lb/sq yd, 1678 Tons total

Order of work to be performed:

1. Scrape soil and organic material off the road edges
2. Fill single ray cracks as soon as possible.
3. Remove alligatored and depressed areas of asphalt, 6 -inches of sub-base gravel, re-fill and re-compact then patch with asphalt (2015 or 2016).
4. Add an overlay of asphalt to entire road system (within 5 to 7 years of patching). Life of overlay is 25 years.
5. Optional to the asphalt overlay (but not recommended by professionals) is the application of a slurry seal (every 6 to 10 years)
6. Optional: Lay 10 ft of asphalt at all (13) gravel driveways (Same time frame as overlay).

Cost of work to be performed:

1. No estimate here (may be done by volunteers).
2. \$900 (+tax).
3. \$15,436 Asphalt Quality Sealers or \$13,600 Lakeside Industries (+ tax and contingency).
4. \$119,000 for a 1 ½ – inch overlay or \$127,000 for a 2 – inch overlay (+ tax and contingency).
5. \$ 47,150 (+tax).
6. \$2600 is a rough estimate at this time (13 places, \$200 each).

REPORT OF THE ROAD COMMITTEE Jcline 19 Sept 2014

After several weeks of research and debate here are our recommendations.

This year, providing we can beat the weather, we should fill the significant cracks in our roads to prevent water infiltration that would degrade the base. Wes Fann of Asphalt Quality Sealers has been recommended by other asphalt contractors that do not do sealing. He is willing seal the cracks that we identify at a rate of \$1.00 per linear foot. This could be as low as 200 feet or up to 400 feet . We have identified cracks in an attached report entitled A SURVEY OF CRACKS AND ALLIGATORING DIGOUTS ON ROADS OF SKYMEADOW COMMUNITY. A good way to proceed would be for our committee to meet with the contractor before the sealing begins and mark out cracks to be sealed. This would combine the information we have acquired with his expertise. We should get started with process as soon as possible.

Step two would be to dig out and replace an area of about 3850 square feet in the vicinity of the big SKY MEADOW entry sign. This area has degraded the substructure and need to be replaced. Quin Clements of Davido Consulting Group recommends we do this in 1 to 2 years. Contractors we have talked to agree. We have two bids for this work. Lakeside Industries bid is \$13,600.00. Asphalt Quality Sealers bid is \$15,436.00. Both do not include tax. We should rebid this with possibly other contractors when the project is scheduled. Two years from now would be a reasonable time frame.

The third step would be to completely overlay the roads with either asphalt overlay of 1 ½ or 2 inches of asphalt paving or a slurry seal process. The engineer says “Do not overlay until much later.” An estimate for 1 ½ inch asphalt overlay from Lakeside Industries is \$119,100.00. This should last another 25 years. The slurry option would apply the slurry every 6 to 10 years. An estimate from Black Line, Inc. is \$47,154.25. Both options may require additional expense if it is necessary to dig out and patch sections where alligating has degraded the substrate so much that overlay or slurry cannot be applied over that area. Again this need not be done for several years. We have not reached a conclusion on which approach would be best.

Repair and Slurry Seal cost analysis B Vernon Sept 2014

Based on the information gathered to date from experts and contractors, it is my belief that the Association can implement a road repair and maintenance program along the following lines, which could be financed with an annual Reserve Fund contribution of \$250 per property owner:

1. Cracks would be sealed/filled as appropriate immediately. Sufficient funds remain in Association accounts to pay the costs of this work.
2. Repairs of the roadways would commence in summer of 2015 with the most urgent/necessary work only. Costs would be paid for from funds raised from fees collected for the new "Road Reserve Fund" to be established at the 2015 Annual Meeting. (The amended rules would require that all payments to the Road Reserve Fund would be due and payable in January at the Annual Meeting so that those funds are available at the beginning of the calendar year.)
3. The remainder of the roadway repairs, including the overlay at the entry at Libbey Road (assuming that can be done for \$7k) would be completed in the summer of 2016. (Total of collected Reserve Funds by this date will have been \$17,500 [assuming 35 lots x \$250 x 2 years].) *(NOTE: If any repairs can be delayed until 2017, that will make payment far easier.)*
4. A Slurry Seal Type II would be applied to the roadway in the summer of 2022. (Total collections for the Reserve Fund from 2015 through 2022 will have been \$70,000--sufficient to pay all costs to date. This rate of collection should be more than enough to cover ongoing costs of maintenance and another Slurry Seal in 7-10 years.)
5. If the Board decides that it can't wait until 2022 and wishes to apply the Slurry Seal in 2021, or even 2020, it can always seek permission to temporarily raise the Road Reserve Fund annual assessment. Or it can use its authority under the Governing Documents to borrow the shortfall in the Reserve Fund and repay the loan from the assessments once they are collected in the normal course.

I would recommend this approach to the Board over the only other possible alternative---an overlay instead of a Slurry Seal, simply on the basis of cost impact to the community. If we followed the same timeline as above (which offers the least impact on our pocketbooks), opting for the overlay would require us to amass a reserve fund of approximately \$145,000 (after sales taxes) during an 8-year collection period. That would cost each property owner \$517 per year for the Road Reserve Fund. And if the Board decided it couldn't wait until 2022 and wanted to do it in 2020, that would raise the annual average to \$690 (vs. \$333 for the Slurry Seal option).

Bear in mind that we cannot apply a Slurry Seal or an overlay until we've saved sufficiently to pay for it in full, and one costs more than three times the other. I'm basing my suggested plan on the contractor's assessment that we could wait 6-8 years before we would have to resurface the roadway. This gives us a reasonable period of time to raise the money, and to impose an assessment fee that doesn't seem too onerous but can be sustained over an indefinite period of time.

Yes, an overlay will last us for 25 years. But we don't have a budget that allows us to spend that much or borrow that much without a significant amount of pain to a lot of members of our community. Plus, a \$250 per year assessment funds an ongoing maintenance program that can run indefinitely without significant change. It's enough to pay for regularly needed repairs and repeated applications of Slurry Seals, just as cities and counties do all around the country. It gives us a quality road surface so long as the road bed itself remains structurally sound. It's a reasonable and financially friendly solution to our needs, and I think it's worthy of our recommendation.

Scraping debris road edges Kurt Gordon From Debra Paros 23 September 2014

I spoke to asphalt contractor Kurt Gordon today about scraping debris from asphalt road margins. Here are his concerns and recommendations.

- i) Yes, growth and debris needs to be kept back off the asphalt, especially if it is trapping and holding water there. (This is also in the DAVID-O report)
- ii) If you see water or moisture anywhere, then go out and shovel out by hand the material along that section.
  - lii) I asked him his opinion on using an implement on a tractor to scrape and he replied: My concern is that you could easily chip off sections of asphalt unintentionally by doing this. If you need to remove material, try using hand equipment.
- iv) I asked him if he knew about rotary brush implements for tractors that could remove such debris/encroaching growth and he replied: I have not come across any such implements nor seen anyone doing that on roads, but maybe there is something available.
  - a) However, I have seen people use a powered broom for routine maintenance of grounds and their roads, or for clean up after a landscaping project; this would be good to use in your neighborhood on a regular basis.
  - b) Wes of Quality Asphalt Sealers has a powered steel wire brush that he uses to remove moss from asphalt areas prior to doing asphalt repairs. This is a very intense scrubbing tool, and that is the only application I've seen it used for.
- v) His conclusion-like statements: "In your neighborhood just keep the road swept clean on a regular basis. Any areas where there is water pooling or moisture lingering then those are the areas to hand scrape nearby."



5. Recommendations from Kurt Gordon on Overlay vs. Chip Seal vs. Slurry Seal for Entire Road System plus Two Options for Entrance and Sky Meadows Drive, From Debra Paros 24 September 2014

- A. I am not in agreement with all of the opinions, recommendations, and figures pointed out in sections 1-3 above. The Road Committee has not yet produced a unified proposal for all the different road projects.
- B. We are in agreement about using Wes of Quality Asphalt Sealers to do our crack sealing at \$1.00/ ft, but there is still some ambiguity about how many linear feet. From Jim Cline's original list of 12 areas and from Kurt Gordon's inspection of these 12 areas the total linear feet of single ray cracks is approximately 118. This total linear feet of crack sealing refers to #2, #4a-c, #7, #8 on the list of 12.
- C. Alligatored areas should not be filled with emulsified asphalt, but rather restored differently, either dig out, or overlay, or chip seal. We are still accumulating information to decide on which of those potential 12 areas should actually be fixed with a dig out. Kurt Gordon pointed out that some of these areas do not require dig out, but rather would be restored when the whole road system received either overlay or chip- seal.
- D. There are two areas on the list of 12 that could easily be repaired by Wes: 1) #1 of 12: cutout by Comcast, intersection of Snowberry and Skycrest; 2) #6 of 12: south edge of cul de sac on Skycrest. We do not yet know what he would charge for these two areas or whether he would do it on the same day as crack sealing.
- E. According to Kurt Gordon's assessment the only two areas where dig-out is possibly needed is #3 and #9. #3: Skycrest west of Grasser Hill, 10'x100'. He said this is not so critical a situation at this time. The digout and overlay would cost \$4.00 per sq ft. The reason for that unit cost being high is because there are no other areas in our neighborhood for digout. #9: small depression at Cline driveway. This depression can only be fixed with a digout recommended at 8ft x 4ft. He also warned that there could be a log underneath. Kurt Gordon's recommendations are in part based on 30 yrs of work on roads in the Useless Bay Colony and golf course. He has not experienced telegraphing of previous cracks/alligatoring up through his 2in overlays; this is why he thinks we should avoid expensive digout previously recommended by engineers.
- F. Kurt Gordon of Island Asphalt has been out here twice this summer and has made recommendations which I've written up and submitted to the Board. Yesterday we talked on the phone again about how to restore the neighborhood entrance area and the sections of Skymeadows Drive up toward the first bend in the road. These areas are #10, #11, and #12 on Jim Cline's List of 12. After reconsidering the condition of the alligatoring at the entrance, #12 in the list, he doesn't feel it warrants an expensive digout. Instead, he recommends a 2 in overlay for the entrance, an area of 3200 sq ft, and the cost would be \$7,000. Yesterday he proposed an alternative for us: For that same cost we could use chipseal (not overlay) and go from Libbey Rd all the way up to include the areas described in #10 and #11.--We should seriously consider this.
- G. Three engineers said that slurry seal is not an option for us. I consulted with Kurt Gordon yesterday about slurry seal and here are his comments. *I am not an expert on slurry seal, but my experience is that I have never seen it hold up. It is a process that is used in hot climates and almost never seen here up here.*
- H. I asked Kurt Gordon to further elaborate on the positives and negatives of chipseal vs. overlay and here are his comments. *Chipseal is a great product and it is often used instead of overlay because it costs one fourth as much. Keep in mind that overlay (15-20 years) will last about three times longer than chipseal (5-7 years). The only reason not to use chipseal is for aesthetics. Chipseal has a heavier tack due to the loose rocks that are rolled into it. If you don't like the light grey color then there is a black tack spray that can be applied afterwards. A road with chipseal gives a rough ride which can be advantageous wherever more traction is needed or wanted. Your entrance and the slope going up Skymeadows Drive would be areas where you might want increased traction.* Kurt and all the engineers have said that overlay is the best choice if you can afford it. Except where there is alligatoring, 1.5 in overlay is sufficient, a 35% savings from 2in.
- I. The bid from Lakeside Industries and unit costs in general are only "ball park figures" at the moment. There are other asphalt contractors available to do this work and they could be more cost effective (Pacific Rim Paving; Bechtel's Construction; and Island Asphalt).

NOTES FROM MEETING WITH SHAUN OF LAKESIDE INDUSTRIES (Jim Cline) 26aug 2014

Definitely should fill all the cracks we have identified.

Should fill cracks in alligating. If we do this we should be able to overlay without digging and repairing except area at entrance.

Area at entrance starting at about even with big "Skymeadows" sign up to the joint between old and new roadway needs to be dugout and repaired soon. Could be separate project. This area is about 45' by 20'. Do not need to go all the way to Libbey road. Make a cut at edge of Libbey Road to make a good joint when doing the overlay. Should not try to "feather" it in.

Overlay of complete road system could be in a several years. Could be in sections.

He recommends 1 ½" everywhere except at the entryway section.

We should scrape the edges of the road back about 2' to keep debris and moss from degrading the asphalt. Someone from the Association with a back blade on a tractor could do this or we could get contractor with a small grader.

He recommended a contractor for the crack filling. I will contact his ASAP.

He will prepare an estimate.

Note: My impression is that he basically agreed with Quin on everything.

## Evaluation of 12 Specific Areas by Kurt Gordon of Island Asphalt September 5, 2014

Please note that measurements in the 12 headings are preliminary measurements made by Jim Cline and are not necessarily the measurements for a future contractor's charges to us. Areas for crack sealing and two other areas for Wes or any other crack seal professional to repair at the same time (as recommended by Kurt) are highlighted in blue.

### #1 North of intersection of Snowberry and Skycrest – cutout by Comcast

- a. What to do: *The only thing I'd recommend is to rake in some fines with asphalt and lay on top. If Wes is coming out to do crack sealing then this is also something he could take care of at that time.*
- b. Current or past condition: *The repair work that is already done here is pretty good. The only negative is that in a couple spots it currently holds water.*
- c. What not to do: *No dig out is recommended nor required.*

### #2 Snowberry near Homire/Vernon driveway – crack 10' (Potential controversy here as to responsibility of SMCA or that of property owner)

- a. What to do: *You could fill these cracks, but ...*
- b. Current or past condition: *... These cracks were caused by that tree which is now cut down. This is typical root damage. Someone has previously tried to seal these cracks. However, there really is not much of a problem here because there is good positive flow of water away from this area.*
- c. What not to do: *no comment*

### #3 Skycrest west of Grasser Hill –digout 10'x100'

- a. What to do: *Yes, a digout could be recommended for this area because this is a fairly flat area. The total cost for something like this would be around \$4.00 / sq ft, but that unit price would come down if other areas were part of the bid.*
- b. Current or past condition: *This is not so critical a situation at this time.*
- c. What not to do: *I would not overlay before fixing this.*

### #4' Skycrest at Grasser Hill – crack A along Skycrest end of Grasser Hill 67'

a.- c. no comment—This was not addressed by Kurt; he inspected the area but was not impressed.

### #4''Crack B 10 ft (10 ft? Seems more like 3 ft) up Grasser Hill width of street 23'

- a. What to do: *Yes, this crack should be filled properly. You need a sealer with properties of elasticity over time.*
- b. Current or past condition: *The reason for this crack is that the culvert underneath is too shallow. There is not enough base material between the road surface and the top of the culvert and the forces from vehicles will cause this separation of the asphalt. Someone tried to repair this area in the past, but not with the best crack sealer material.*
- c. What not to do: *Do not fill this or any other cracks with the wrong material.*

### #4'''Crack C by mailbox 4'

- a. What to do: *If you are already filling cracks then this could be added to the list.*
- b. Current or past condition: *This crack may not cause any damage to the base layer because there is good drainage from this area.*
- c. What not to do: no comment

#5 Skycrest near WurZRainer drive - crack 25' (possibly 2.5 ft and not 25 ft)

- a. What to do: *The only thing I see that could use some repair is the short (2.5 ft not 25 ft) crack coming out starting at the end-center of the driveway.*
- b. Current or past condition: *This short crack is not a major problem, but could be added to list if other cracks are being filled.*
- c. What not to do: *The shallow intermittent separations that seem to form a vein across the road are not a problem nor does it need any repair work. Also, if you mean the area of wear along the lane from tree to mailbox, then that is not anything that needs repair; this is an auger shadow left when the asphalt road was built.*

#6 South edge of Skycrest at cul-de-sac - 40'x 6'

- a. What to do: *Apply a 2-in thick overlay to this area and maintaining slope for runoff. This would be a project that Wes could do if he is also coming out to do crack sealing.*
- b. Current or past condition: *This area needs to be raised up, but that can be done in two different ways—asphalt overlay or a digout.*
- c. What not to do: *Given the current condition I would not recommend the extra cost of a digout here.*

#7 Skymeadow at Skycrest - crack 13'

- a. What to do: *If you mean the crack that crosses the street near water hydrant on Good's property, then yes, this is a crack that needs sealing with the proper material. (see #8)*
- b. Current or past condition: *This is another situation caused by a shallow culvert situation and the action of heavy trucks coming through.*
- c. What not to do: no comment

#8 Skymeadow at Rowell drive - digout 7'x50' and crack 8'

- a. What to do: *If by 8' crack you mean the seam along the center line, then that could be sealed by Wes. Initially walking around this area he did not see any area in need of digout, but later in the day when he returned to take some measurements he noticed a bad area and then mentioned this over the phone: There is a lot of fatigue on the south side of Skycrest near the intersection with Skymeadow Dr.*
- b. Current or past condition: no comment
- c. What not to do: *Digout is overkill and an unnecessary expense here.*

#9 Skymeadow at Cline Drive – digout small depression

- a. What to do: Yes, the only way to fix this is a digout, but that could become complicated. If you do it then I'd recommend a digout area of 8ft x 4ft. Just beware that there could you could run into something down there.
- b. Current or past condition: I am not 100% sure, but this could be due to a tree/log underneath. The organic material is decomposing over time and thus the depression forms.
- c. What not to do: Make sure that the digout area goes far enough uphill past the depression.

Page 2

#10 Skymeadow at 25MPH sign – digout 25'x4' (see #11)

- a. What to do: This could be a digout or an overlay fix. We/Kurt may need to recommend on this area. Either we skipped it and went over to the other side of the street to look at the area described in #11 or he just wasn't that impressed with the damage. I'm not sure.

#11 Skymeadow at "soliciting" sign – digout 8'x150'

- a. What to do: This area (on the opposite side of the street from where the 25 mph sign is located) might be repaired by a one ft deep digout; or alternatively a very thick overlay might also be sufficient. Actually, the size of the area with this problem is larger than 8'x150'—it really covers quite a long area ~180 ft long and to the center of the road. (see #10?)
- b. Current or past condition: Sometimes sub-base failure is a temporary change—the damage was done initially but the process has stabilized over time. If this is the case, then go with a thick overlay.
- c. What not to do: Possibly do not digout given that this is a sloping area and you have good positive flow in this section of the road.

#12 Skymeadow at Libbey Rd – digout entire area about 115 ' into development. The width varies from 90' at Libbey Rd to 22'

- a. What to do: Kurt looked walked around and inspected this area. He returned later and did some measuring. He will get back to us about his recommendations and costs for repairing this area.
- b. Current or past condition: There are a lot of problems here.
- c. What not to do: It is not cost effective to do patch work in this area.

+#13 Drainage area at south end of Snowberry near Schmucker Driveway—cracks, drain

- a. What to do: A patch-overlay would be the cheapest; a digout would be much more expensive.
  - b. Current or past condition: This entire road is in good shape, but this area needs some work, but best to wait 6-8 years when you will need to give the road an overlay and then correct these things. Some crack filling work has been done at this end of the road previously, but not with the right type of crack sealer.
  - c. What not to do: This area is very shallow and you can't add too much material without creating a dam somewhere.
-

+#14 Digout areas in general proposed by engineers

- a. What to do: *Such digout areas are legitimate whenever heavy traffic is running over the failed area.*
- b. Current or past condition: *In your neighborhood each area has to be separately considered for this approach.*
- c. What not to do: *As I pointed out (see above) there are some repair areas in your neighborhood that will not require digout but rather can be restored with overlay.*

Compiled by Debra Paros, 9/9/14

Dear Road Committee:

From Debra Paros 23 September 2014

I spoke to asphalt contractor Kurt Gordon today about scraping debris from asphalt road margins. Here are his concerns and recommendations.

- I) Yes, growth and debris needs to be kept back off the asphalt, especially if it is trapping and holding water there. (This is also in the DAVID-O report)
- ii) If you see water or moisture anywhere, then go out and shovel out by hand the material along that section.
- lii) I asked him his opinion on using an implement on a tractor to scrape and he replied: My concern is that you could easily chip off sections of asphalt unintentionally by doing this. If you need to remove material, try using hand equipment.
- iv) I asked him if he knew about rotary brush implements for tractors that could remove such debris/encroaching growth and he replied: I have not come across any such implements nor seen anyone doing that on roads, but maybe there is something available.
- a) However, I have seen people use a powered broom for routine maintenance of grounds and their roads, or for clean up after a landscaping project; this would be good to use in your neighborhood on a regular basis.
- b) Wes of Quality Asphalt Sealers has a powered steel wire brush that he uses to remove moss from asphalt areas prior to doing asphalt repairs. This is a very intense scrubbing tool, and that is the only application I've seen it used for.
- v) His conclusion-like statements: "In your neighbor just keep the road swept clean on a regular basis. Any areas where there is water pooling or moisture lingering then those are the areas to hand scrape nearby."

Thanks,  
Debra

A SURVEY OF CRACKS AND ALLIGATORING DIGOUTS ON ROADS OF SKYMEADOW COMMUNITY. 15 August 2015 (Jim Cline & Mons Hoyrup)

#1 North of intersection of Snowberry and Skycrest – cutout by Comcast needs to be filled before overlay and root swelling needs digout.

**#2 Snowberry near Homire/Vernon driveway – crack 10'**

#3 Skycrest west of Grasser Hill –digout 10'x100'

**#4 Skycrest at Grasser Hill –**

**a. crack A along Skycrest end of Grasser Hill 67'**

**b. crack B 10 ft. up Grasser Hill width of street 23'**

**c. crack C by mailbox 4'**

**#5 Skycrest near Wurzrainer drive - crack 25'**

#6 South edge of Skycrest at cul-de-sac - digout 40'x 6'

**#7 Skymeadow at Skycrest - crack 13'**

#8 Skymeadow at Rowell drive - digout 7'x50' and **crack 8'**

#9 Skymeadow at Cline Drive – digout small depression

#10 Skymeadow at 25MPH sign – digout 25'x4'

#11 Skymeadow at “soliciting” sign – digout 8'x150'

#12 Skymeadow at Libbey Rd – digout entire area about 115 ' into development. The width varies from 90' at Libbey Rd to 22'.

**Total number of cracks – Seven (7).**

**Total length of cracks – One Hundred fifty (150) Ft.**