

## **Part 2. Chipseal, Asphalt, Gravel, or None of the Above-Pick One Only**

There are a range of price and performance considerations when it comes to providing surface toppings for Honoco Road and pro/con considerations for each. As we noted in Part 1, however, for both chipseal and asphalt most experts strongly discourage their use without making the commitment and expense to adequately prepare the road base before either of these toppings are applied. The discussion which follows assumes that proper base preparation has been done before considering the options discussed here.

The additional dilemma that all of these choices present is whether or not individual members are free to choose from all of the options that are described here. From past experience it is clearly apparent that many owners are either never going to be willing to bear the expense of improving their easement over and above the current existing surface conditions, or that they will all make different decisions if allowed to do so. Also as we noted earlier, there are potential legal issues with “requiring” owners to adopt improvements, as well as growing opposition among the membership to subsidize work on non-participating parcel owner properties, especially for those expenses considered outside normal maintenance. To add to the problem, in order to curtail expenses some owners may only wish to do a “portion” of their easement rather than surface the complete extent of their property.

All of these considerations pose significant problems for future road quality and road maintenance by the Association. Maintaining multiple surface types will be both expensive and likely beyond our resources and expertise. All the more reason to decide on a single solution for the road that is acceptable to all of the membership and within everyone’s budget. A single solution for the road agreed to by the majority of the membership and managed solely by the Association may be the best path in moving forward. Leaving these decisions to individual homeowners on the road will be nothing but a continuing source of conflict and trouble.

### **As Is**

Not adding any specific topping to the road other than replacing gravel has somewhat withstood the test of time for many of our road years. You can’t repair a pothole by simply filling it, but you can more or less make summer-stayers happy by temporarily covering it up for a while in between rains, which is what we currently do with our “Throw and Go” pothole filling strategy or our scarifier when we can use it.

There are a lot of assumptions that must be in place to make the ‘as-is’ approach work. The “dirt” topping we currently have on the road could hold up reasonably well PROVIDED the surface composition is permeable enough to let water drain through it, the composition of the dirt contains enough of the right size stone to make it rigid enough to prevent large deflections, and that our road is contoured or sloped enough to freely drain water from the road surface. All of which our road is not. In addition, it takes an aggressive maintenance approach to keep it viable. It is the most susceptible road surface to weather, and creates lots of complaints about potholes, summertime dust, and frost-heaving in the winter. To give you an idea of costs, our ‘throw and go’ strategy which puts dirt in the pothole and lets traffic compact it, costs about \$1000 per application to complete the road from one end to another, and generally only lasts to the next storm before it needs to be repeated, which could be a matter of days depending on the weather. It completely falls apart during late winter and spring, and if we are lucky

enough to have a dry year it usually needs an application of Calcium Chloride to the surface to minimize the dust complaints during the summertime.

We often hear that because Honoco was a former railroad bed that the limestone ballast the RR used under the tracks should make for an excellent base material for a good road. It would have, PROVIDED that we historically took advantage of it. We did not. Most of our road surface was created by digging out the shale bank and spreading it on top of the ballast. Shale is very weak and breaks down quickly into clay and silt, forming a fine powder which completely infiltrated the ballast thickness. Clay is highly water-impermeable which eliminated any water drainage through the road surface. The clay, along with many years of unknown material(s) additions to the road surface have left us with an estimated 1-2 ft of weak, non-draining, and frost-susceptible "dirt" above the ballast in some places which forms most of the mud we currently drive on.

It has been years since we have attempted to grade the road to provide water drainage from the surface. In addition, for many years we attempted to add all sorts of material and/or gravel types to the surface which were either quickly lost because the surface was not contoured and/or the fill not compacted or they formed an aggregate composition that was completely wrong for a road surface. Most road experts would say it might be time to consider digging up that 2ft layer and starting over, but obviously there is little appetite among homeowners for the complexity or expense involved to implement that on Honoco.

## **Gravel**

Gravel is the basis for the majority of unpaved roads in the country. Depending on where you live, there are many differences in various gravel compositions which dictate where they are used. Gravels are a mixture of sized natural rock, sand, and silt, with little or no clay, and not surprisingly, different gravel compositions are needed in different layers on a road. As you might expect, there are NYSDOT specifications when it comes to "gravel", and you can actually purchase a NYSDOT-spec certified gravel at many gravel and stone companies for your specific use on a gravel road. Our road likely does not technically qualify as a "gravel" road anymore because the composition of our "dirt" is way outside the specs required for a gravel road surface. We have lost most of our stone and now have mostly "fines" left (meaning "dirt"). Obviously, since they are tested and certified, "certified gravels" are more expensive, so it is doubtful that we have ever used a 100% correct material on Honoco, and whether or not it would have made any difference. Doubtful.

There is some validity to the concept of a "gravel-like" road surface using clean stone, however, and we only have to look south of Honoco Road to Clearview and Firelane 6 to see how it has been used. You might call this "chipseal without the seal", and it illustrates how a lakeside community similar to ours has decided to manage their road maintenance. Every year, depending on how quickly their road deteriorates, the parcels on Clearview/Firelane 6 get together and purchase truckloads of clean crushed stone, usually in the 3/8" to 1/2" size range which is dumped in front of each parcel. A group of volunteers armed with garden rakes and usually a neighbor's front loader spread it out on the easement on each property over the weekend. No asphalt, no chipseal mix, no weather delays, no contractors involved, minimal traffic delays, and presumably no expense other than the cost of the stone and possible delivery charges, with minimal surface prep costs, if any. We should note that they have spent a considerable amount of time developing road contour and drainage in addition to the stone additions, which significantly helps. If you want to see how this works on Honoco, you can go down to

Cunningham's place at 1079 Honoco. For many years they have been adding a crushed stone layer to their portion of the road at the beginning of each season and it seems to hold up very well.

There are a number of issues with this approach, however. First, is the question of how long it will last which is an open question. The stone cannot last long as there is no binder or compaction to keep it in place. It disappears and/or wears out quickly in spots and unfortunately we don't know how often they have to reapply the stone, but suspect it might be often. Secondly, Clearview/Firelane 6 is only a mile long road with far less traffic and so we don't know how it compares to Honoco, but it should last significantly longer based on the lower traffic density. Snowplowing is a significant problem. If a plow operator does not correctly set the height of the plow, the blade can completely remove all of the stone from the road surface in one pass. In addition, washouts during spring storms can completely eliminate the stone from the surface possibly requiring complete reapplication of the stone. More importantly, just adding surface stone does nothing to improve the strength of the all-important base of the road. It remains wet and weak underneath the stone and will continue to wear out and impact the surface quality.

Considering these issues, why would anyone do this? Because it is cheap. What if every year we added 1" of  $\frac{1}{4}$ " to  $\frac{3}{8}$ " crushed stone to the "driveway" portion that runs across each property? Assume for a moment that the average size "driveway" on Honoco is 120' x 9' or 1080 sqft., and that we want to add 1" of either  $\frac{1}{4}$ " or  $\frac{1}{2}$ " stone to the entire surface. At 1.5T/cuyd that is 5.4 tons of stone. Current prices at Genoa Sand and Gravel are about \$14/T for #1A gravel which is the size we use for chipseal, which means that your estimated costs for adding 1" of clean fine grained dust control and pothole-free stone to your portion of the driveway are on the order of \$100 (including a loading cost but excluding delivery) per application. Provided, of course, that you have the cooperation of your neighbors to spread it out. And, if each parcel reserved a pile of stone on their property, it is a relatively simple task to shovel the stone into any holes or bare spots that will form on an individual property during the season. \$100 an application might be an attractive alternative compared to our soaring maintenance costs and practices, especially for those who only use Honoco on weekends during the summers.

Over the years some of your neighbors figured out that this was a relatively inexpensive way to temporarily smooth out their driveway surface and eliminate dust, at least for the summer season while they are here. This is one of several reasons you see those "DO NOT SCRAPE" signs on some parcels. After going to the trouble and expense of improving their portion of the driveway most did not take kindly to coming back the next season to find all of their stone shoved off the road. So most of them quit the practice of adding stone but left the signs up anyways.

### **Chipseal**

Back in the day chipseal was called "oil and stone", a term we still erroneously use today. The "oil" was literally used motor oil slathered on the road surface and sometimes topped with fine "stone". The motor oil quickly washed off the road and into the lake when it rained, usually along with oil-covered stone and dirt, prompting NYS to send us a letter in 1983 outlawing its use on Honoco, and anywhere else for that matter.

Chipseal is the modern day replacement for this mess, and represents an effective and economical approach to sealing a road surface to prevent moisture intrusion and subsequent weakening of the road base and dust. The binder or "seal" is a water-based asphalt material which is somewhat similar to a

latex paint. It is hot-sprayed onto the surface followed by application of ¼ to ½ inch stone “chips”. The stone is then rolled into the binder creating a thin but firm water-resistant and dust-free surface when it has cured. Many contractors recommend that a second course of chipseal using a smaller “chip” be applied immediately on top of the first course. This supposedly improves crack sealing, delays crack formation, reduces road noise, adds snowplow resistance, and extends life of the topping.

There are several major drawbacks to chipseal. It is important to note that each chipseal layer is only on the order of 3/8” thick, so it is far from capable of supporting traffic loads by itself and is primarily designed to seal the road surface and protect the base from moisture intrusion. In addition, this is not a DIY project. It requires experienced equipment contractors, specialized equipment, and cooperation from Mother Nature. The binder needs to cure in the absence of moisture (rain or recent rain) for at least ½ day without traffic. For our area that is usually a tall order, especially when trying to corral contractors that can only work when Mother Nature cooperates. And, if it rains prior to curing, the binder can wash into the lake, which can alert the DEC. In addition, we are often in competition with other contractor jobs weather permitting, and our one-way road creates logistical problems waiting to be able to drive on the road following application. The process requires warm, dry weather, which restricts application to between Memorial Day and Labor Day in CNY. If the weather doesn’t cooperate, the work might be put off until the next year, so the job can quickly become a coordination nightmare. In addition, the binder is in high demand during the summer months by both state and local government entities in addition to us small private consumers. As a result, we are usually low down on the priority list for material supply and often can’t get the job done.

However, despite these limitations, WHEN we are lucky enough to get it done, it is a cost-effective surface topping for a road like Honoco. For those who might not be aware, Lake Road is a chip and seal road and has been for many years. It is resurfaced with an additional layer of chip and seal about every 3-4 years. Chipseal was a major Honoco surfacing project in both 2006 and 2007, when over 50 parcels paid out over \$17,000 to chipseal their properties. Remnants of those toppings can still be seen in some places on the road today. From most studies, a correctly-applied chipseal surface is expected to last from 5 to 7 years at a significantly reduced cost compared to an asphalt topping. Prices vary considerably, but there is agreement that chipseal is between one fourth and one fifth of the cost of asphalt paving. Our 2018 price for chipseal, for example, was \$.60/sqft compared to \$1.60/sqft for what is known as “surface course” asphalt, so slightly less than a third the cost. This means we could re-apply three layers of chipseal for the cost of one application of asphalt, which is an important consideration for a road in need of as much remedial maintenance as ours. Excluding the necessary base prep costs which we have noted are substantial, chipsealing our typical 120’ x 9’ parcel with a single coat will cost the homeowner on the order of \$650 at these prices.

## **Asphalt**

Unlike chipseal, which is brought to a jobsite and separately applied as a “seal” and a “chip” layer, hot mix asphalt pavement (asphalt oil and a mixture of crushed stone, gravel, and sand) is pre-mixed at an asphalt plant and delivered heated to the jobsite and applied to the surface and subsequently rolled with specialized equipment. Many Honoco homeowners began applying asphalt to the road in 2013, with the full encouragement and financial participation of the Association. For several years homeowners were given dues waivers as an incentive to pave their properties. Unfortunately, in our enthusiasm to pave, the road base prep was for the most part forgotten, and not adequately prepped to

support the asphalt topping, nor was it considered in the overall paving costs. Now, five years after the initial applications, many of the originally paved sections of the asphalt are showing “alligator cracking” and premature pavement failure.

There are different asphalt types, depending on where and how it is to be used. A “standard” application of asphalt involves laying down what is known as a “tack coat” which is an asphalt binder designed to provide a sticky layer which facilitates adhesion between the road base surface and the asphalt, followed by a “binder” course or base coat of asphalt which is designed to be the load bearing course and typically contains 1” or larger stone. It is the foundation for the upper pavement structure and must offer excellent rigidity and bearing capacity. Because the binder course surface is usually quite rough because of the large stone size and can trap water in between the surface stones, this layer is usually followed by a “surface coat”, or finish, that typically contains 3/8” stone and provides a smoother finish over the binder coat. Base layers are typically 1-1/2” thick, with surface coats between 1” and 1-1/2” thick.

There are several major drawbacks to asphalt for our application. As is the case with chipseal, asphalt application is also not a DIY project. It requires experienced equipment contractors, specialized equipment, and cooperation from Mother Nature. It cannot be applied during rain or recent rain and when the temperature is below 45 degrees. For our area the recommended season for application is between April 15 and October 31. In addition, like chipseal application, we are often in competition with other contractor jobs weather permitting. If the weather doesn’t cooperate, the work might be put off until the next year, so the job can quickly become a coordination nightmare. In addition, hot mix asphalt is in high demand during the summer months by both state and local government entities in addition to us small private consumers and supply is at the mercy of the asphalt mix plant capacities and scheduling. As a result, we are usually again low down on the priority list for material supply.

It should also be remembered that like gravel and chipseal, a surface course of asphalt is only a topping, and does not supply the structural integrity that the road useage requires unless a base course is applied. It is also the most expensive option for a surface topping. Considering that it essentially performs the same function as chipseal, i.e., sealing the base from moisture intrusion, dust elimination, and surface smoothness, at \$1.60/sqft for asphalt for our 120’ x 9’ section it will cost on the order of \$1730 excluding the base prep. The argument that asphalt pavement should long outlast other toppings like chipseal is often used to justify the added cost. However, most longevity estimates place asphalt life at between 10-15 years, and heavily dependent on the thickness and base layer support it is placed on and the traffic weight it is required to support. With thin asphalt pavements like ours so far (defined as less than 4 inches thick), most experts agree that alligator cracked areas can quickly progress to potholes in much less than 10 years. Our current experience is about half of that.

Which brings up the important question of asphalt repair, which will likely become a significant factor in our future maintenance costs. As difficult as it is to schedule a paving contractor willing to do piece work on Honoco, it is equally difficult to find an asphalt contractor that is willing to devote their time and equipment to patching and/or repairing potholes in a road they are not going to resurface, and likely quite expensive if we could find one. As the square footage for the job goes down, the price goes up. Let’s assume we can’t, and estimate how much it might cost to do a round of repairs ourselves with cold patch, which is a material specifically designed for pavement pothole repair. You can pick up a 50 lb. bag of cold patch at one of the big box stores for \$13. According to the manufacturer, this is enough

to cover 6 sqft to a depth of 1". Let's be generous and say our potholes are all 1sqft and 1" deep. So our 50lb bag will cover 6 road potholes. Let's further conservatively assume that each of our 158 parcels has only 6 potholes, so we need a \$13 bag for each parcel, for a total of 158 bags at \$13 ea or \$2054 per application! How many times we might have to repeat this process annually is a complete unknown, and the process is much more involved than just filling the hole with the patching compound. The hole has to be dried and the sides shaped or it won't stay put. And, this amount is just for material. \$2054 per application assumes we use non-paid volunteers to effect the repairs.

So, how do you choose the best option that everyone can agree on? It is likely to be a steep uphill battle to get everyone on board with either asphalt or chipseal improvements. Keep in mind that a significant number of parcels on the road are, and probably always will be, "camps", many of which are primarily used as simple getaways during the summer months. Property maintenance and improvement are not high priorities for many, and consequently the number that are willing to spend several thousand dollars on road improvements to their properties is slim to none. We may need to find a way to make the less expensive options work. It's your choice, but it has to work for everyone. Thanks.