
STATUS OF POTENTIAL ISSUES & STRATEGY OPTIONS BROWNVILLE RUBBLE LANDFILL

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On Behalf of the
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OVERALL STRATEGY

The Greater Brownville Citizen Association is deeply concerned about the potential impact of the proposed Brownville rubble landfill. The rubblefill is proposed for a site located in southeastern Brown County. Following is a summary of the Association's overall strategy for preventing the rubblefill from causing undue harm to residents of the area.

- A. Convince the Brown County Council and/or County Executive to adopt measures that greatly reduce or eliminate rubblefill impacts.
- B. Convince the hearing officer that a rubblefill on the proposed site will cause impacts substantially greater than a rubblefill built on any other similarly zoned tract in the County.
- C. Convince the State Department of the Environment (SDE) to deny or condition a rubblefill permit in a way that reduces impacts.

LEGISLATION

On June 2, 2000 Association representatives met with Brown County Council Chairman John Doe. The Councilman also represents the district in which the Brownville rubblefill site is located. The following proposed measures were discussed during the meeting:

RECYCLING REQUIREMENT

Brown County anticipates that an average of 29% of the rubble (construction and demolition debris) waste stream will be recycled.¹ At the proposed Brown House Road Recycling Facility, 50% to 70% of the construction and demolition debris waste stream will be recycled. According to the manager of the Brown House Road facility, a substantial portion of the remaining 30% to 50% can be recycled, but not with the equipment presently anticipated for the facility.

Theoretically, up to 90% of the rubble waste stream is recyclable.

The applicant proposes to recycle 25% to 35% of the construction and demolition debris waste stream entering their Brown Road facility. However, 41% of the waste stream will go directly into the rubblefill without any recycling.² We believe that a far greater portion of the rubble waste stream can (and should) be recycled.

The Association asked Councilman Doe to consider legislation mandating a minimum amount of rubble recycling. One mechanism for doing this would be to prohibit "recyclable" materials from being placed in a rubblefill. State law gives the County the authority to determine what

¹ See Table 18, following page 44, in *Analysis of Rubble Landfill Capacity in Brown County*.

² See *Brown Rubblefill Business Plan* in Appendix 6 of *Analysis of Rubble Landfill Capacity in Brown County*.

materials may be excluded from a rubble landfill as part of the solid waste plan amendment process. Thus the perennial concern of SDE preemption may not apply in this case.³

RESTORE TO ORIGINAL SITE CONTOURS

Traditionally, rubblefills have been viewed as a reasonable way of restoring former mining sites to usable grades. Sand and gravel was mined from the Brownville site in the 1980s. On the next page you will find a figure showing a cross-section (*illustrations not included to minimize download time*) of the: 1) existing contours (the land surface elevation) on the site as they were left after mining, 2) the proposed contours once the rubblefill is completed, and 3) the contours as they existed originally - prior to mining. The profile shows that the original land surface was lowered by a maximum of 20 feet during mining. The proposed rubblefill would tower nearly 130 feet above the existing land surface.

The Association asked Councilman Doe to consider legislation which would prohibit a rubblefill from going any higher than the “natural” (original) land surface of a former mining site. This would greatly reduce the visibility of future rubblefills. Instead of a 130-foot high mountain, the rubblefill surface would match the natural contours of the land and would be virtually invisible once the fill was completed, vegetated, and screened with trees. It would look much like a pasture or hayfield.

There is some precedence for this in State law. Coal mines must be restored to “approximate original contours” though this requirement does not apply to sand and gravel and other non-coal mining.

WALLBOARD PROHIBITION

A number of rubblefills have released hydrogen sulfide gas. This gas has the sulfurous odor of rotten eggs. Hydrogen sulfide can cause nausea, headaches, and cardiovascular problems at high concentrations. At lower concentrations it has been a severe nuisance to people living as far away as three miles from an emitting rubblefill.

A key ingredient for hydrogen sulfide formation is the calcium sulfate contained in gypsum wallboard. Wallboard makes up 5% to 15% of the rubblefill waste stream. The Association asked Councilman Doe to support legislation prohibiting the disposal of wallboard in

³ It appears that SDE’s comprehensive programs for preventing landfilled waste from causing water pollution preempts the County from denying a Special Exception because of waste-caused water pollution. The preemption **MAY** apply to other areas under SDE’s control, such as air quality impacts and changes in the quantity of runoff due to landfill construction. But this is by no means certain and is an area requiring further research by our legal counsel.

rubblefills using the authority granted the County by State law to decide which materials may be placed in a landfill.

TEMPORARY HOLD ON RUBBLEFILL SPECIAL EXCEPTION APPLICATIONS

To provide the Council and staff a reasonable opportunity to consider the need for the preceding changes to County law, the Association asked Councilman Doe to propose a temporary hold on processing of Special Exception applications for the Brownville rubblefill as well as those proposed for two other sites in the county. The Councilman thought he could get majority support on the Council if he proposed first to form a committee to take a hard look at better ways of managing rubble. Councilman Doe needed to verify the legality of such a proposal. He thought that he would know whether the proposal would work by June 15th.

SOLID WASTE PLAN AMENDMENT

The Association did not discuss this with Councilman Doe since it would entail a specific conversation regarding the Brownville facility. Such a discussion might have forced the Councilman to recuse himself from future votes specific to this facility. The proposed rubblefill has NOT been included in the County's Solid Waste Plan. The facility must be in the plan to receive a permit from SDE. The County Council must vote to include the facility. This vote does not occur until after all the zoning issues have been resolved.

SPECIAL EXCEPTION ISSUES

Following are the issues identified thus far which could be raised at the Special Exception hearing before the hearing officer (HO). To deny the Special Exception, the HO must find that permitting a rubblefill on the Brown site would have significantly greater adverse impact than a rubblefill built on all other similarly zoned land in Brown County. This is known as the Schultz vs. Pritts test also as the extraordinary impact test. The rubblefill site is zoned Open Space (OS).

SDE Preemption: We must also take care to avoid issues which are preempted by State Department of the Environment (SDE) regulations and programs. Past decisions by local governments to deny approval for rubblefills have been overturned by courts when it was determined that the denial was based on issues regulated by SDE. It is uncertain at this point how far preemption extends. It is most likely to apply to water quality impacts resulting from the pollution emanating from landfilled waste. It *may* be less likely to apply to environmental impacts where the County is the lead such as water pollution caused by stormwater runoff which does not come into contact with landfilled waste.

ASTHMA & OTHER RESPIRATORY CONDITIONS

Hospitalization data shows that the two zip codes covering the impact area have the 2nd and 5th highest hospitalization rates in the County for respiratory diseases. Of the seven zip codes in the County which are dominated by lands zoned Open Space (the same zone as the rubblefill site) the zip code covering your area has the highest hospitalization rate.

Dr. Jane Smith, a respiratory expert with the School of Public Health & Hygiene, has reviewed the hospitalization data. Though Dr. Smith cannot give a cause for the high hospitalization rate,

he believes that residents of the areas affected by the rubblefill are uniquely at-risk to factors which would aggravate respiratory illnesses.

Dr. Smith believes that increased truck emissions are likely to be the aspect of the rubblefill which has the most significant effect on respiratory illnesses. Of the 12,000 daily truck trips generated by mining and landfill operations throughout the County, 27% occur on Route 999 - the highway that will be used by trucks accessing the proposed rubblefill.

Dr. Smith believes that unless crushing or other high dust generating processes are pursued, dust emissions will be relatively low. The applicant has stated that crushing will not be conducted on the site. However, there may be other activities common to rubblefills that could generate dust. Thus there would be value in taking Dr. Smith on a tour of several active rubblefills as well as the vicinity of the proposed rubblefill.

Asthma Sufferers: The Association has been circulating survey forms which asks if area residents suffer from asthma or other respiratory conditions. We should ask those who checked this box on the form if: 1) they could get a letter from their doctor describing how rubblefill dust, truck traffic, and hydrogen sulfide could affect their patient's condition, and 2) if the asthma sufferer could testify at the Special Exception hearing. We should also contact households located near the rubblefill which have not returned a survey form. At a minimum, this should include all the homes along Route 999 and Route 888.

Hydrogen Sulfide: Dr. Smith does not think that hydrogen sulfide will have an adverse effect on respiratory conditions. Hydrogen sulfide would have more effect on people with cardiovascular conditions. However, to assess the potential effects of hydrogen sulfide we need some hard data on actual concentrations in the vicinity of rubblefills. I've asked SDE for hydrogen sulfide emission data for other rubblefills in the state.

As of May 27th SDE anticipated getting the existing data out to me by this week (May 7th or so). If the SDE data shows the concentrations are relatively low then we might consider renting a hydrogen sulfide meter to measure actual concentrations at the only rubblefill which is presently emitting - the Jerry Creek rubblefill in northern Franklin County. Meter rental would be \$180 per week.

Bob Jones, who lives near the rubblefill and led the charge against it, has volunteered to take measurements. My time to train Bob in meter use plus the rental charge would probably bring the total for this activity to \$300-\$500. If we find high hydrogen sulfide levels then it would be good to have Dr. Smith make measurements at the Jerry Creek rubblefill so he can testify first-hand.

Preemption: We need to determine if SDE's air quality programs preempt the County from denying a Special Exception application because of air quality concerns. If this is likely then the Association should put its limited resources into other issues (for the Special Exception hearing). Our attorney has been asked to look into the preemption question.

PECKS SWAMP

This unique waterway-wetland system supports four rare, threatened, or endangered plant species. Volunteers are surveying for these plants on properties located downstream of the rubblefill site where owners have granted access.

A Great Blue Heron rookery (concentration of nests) is located near the mouth of Pecks Swamp about 2.1-miles west of the proposed rubblefill. It is possible that the rubblefill could adversely affect the rookery. Research into this potential is on-going. Great Blue Heron rookeries are considered unique and very important by the State.

The tributaries to Pecks Swamp most directly impacted by the rubblefill have been surveyed for fish and aquatic insect populations. The fish in both streams are very limited. Only two species were encountered, which indicates very poor conditions for fish. This probably reflects the intermittent nature of water flow in both streams. Aquatic insect and crustacean populations indicate a high-quality environment. A number of species of submerged aquatic vegetation have been documented in Pecks Swamp, which further attests to the high quality and ecological value of this stream system. The next section of this review of issues describes how the rubblefill could exacerbate the lack of water in the Pecks Swamp system.

GROUNDWATER RECHARGE LOSS

Pecks Swamp and its tributary suffer from a lack of groundwater inflow. During dry periods the only water entering streams and wetlands is groundwater inflow. For the first time in decades, long-time area residents saw Pecks Swamp go dry last summer. Therefore this stream is highly vulnerable to any factor which would further reduce the amount of water entering the channel come dry weather.

The proposed rubblefill will eliminate 40-60 million gallons/year of dry-weather inflow. This loss will result from covering the 100-acre landfill footprint with an impermeable liner and cover. The plastic liner and cover will prevent rainfall from soaking into the soil and recharging the ground water table. After the rubblefill is completed, the amount of groundwater inflow to the tributary streams, Pecks Swamp, and associated wetlands will decrease dramatically. This will put greater stress on a system which is already stressed by insufficient groundwater inflow.

It is possible that this impact could be resolved if the applicant were to install measures to collect then recharge runoff from the landfill. This would be runoff that has *NOT* come into contact with the landfilled waste.

HEIGHT LIMIT

The *Brown County Zoning Ordinance*, limits maximum building height in the Open Space zone to 35 feet. The Ordinance defines a "Building" as: "A 'Structure' having a roof and used for the shelter, support, or enclosure of persons, animals, or property." The Ordinance defines a "Structure" as: "Anything constructed or built."

The rubblefill meets the definition of both a building and a structure. It is certainly constructed and built. The impermeable cap is an engineered layer of impermeable material designed to function in the same manner as a roof. The roof protects the landfilled rubble which is the owner's property.

We asked our legal counsel for an opinion on whether they agree the rubblefill is a building as defined above and, therefore, should be limited to a maximum height of 35 feet (as opposed to the 130-foot height the applicant has proposed).

HIGHEST CLAY WATERFALL IN THE STATE

Just downstream of the site is a five-foot high clay waterfall. It is believed to be the highest waterfall of its type (clay) in the state. In fact, the State Geological Survey (SGS) has agreed to add it to their official list of the highest waterfalls in The state. SGS also plans to post a photo of the waterfall on it's website.

Increased stormwater runoff from the rubblefill could accelerate erosion in the stream channel where the waterfall is located. Accelerated erosion could alter the waterfall in ways that detract from this unique natural feature. Our attorney has identified an expert on stream channel erosion (morphology) who could help us determine how likely it is that the rubblefill would cause harm to the waterfall. However, we need to address two questions before engaging an expert on this issue.

First, how is this issue likely to play with the hearing officer and the courts? Are they likely to be moved by impacts to the waterfall or to yawn?

Second, as with other environmental issues, we need to determine if SDE's authority preempts the County from denying a Special Exception based upon this impact. Stream channel erosion due to new development is regulated through the State Stormwater Management Act, which is administered by SDE. But Brown County has been delegated authority to administer it's local stormwater management program by SDE. Therefore it may be less that the County is preempted by SDE on this issue. Our attorney has been asked to also look into this preemption question.

PARTIES

We need to ensure that parties to litigation filed by the Association have standing. To have standing one must show that the rubblefill will impact them in ways that are different (greater) than the general public. Obviously, those who own property next to the rubblefill are more likely to see a decline in the value of their land when compared to the general public. An area resident with asthma may suffer more potential harm than the general public.

The Association should ask all those who own property next to or near the site if they would be willing to become parties in the opposition to the Special Exception requested by the applicant. We should also focus on those who own property downstream of the site beginning at the edge

of the applicant's property and working down to Pecks Swamp to its junction with the Brown River.

For the Special Exception hearing we should prepare a large map showing the rubblefill site and all surrounding properties. We should then highlight the properties owned by people opposed to the rubblefill. I have acquired the property maps and can provide them to the Association so a volunteer can do the highlighting. But first we should complete the polling to identify parties.

PROPERTY VALUE

The value of property within a mile of a rubblefill may be lowered by 11%.⁴ The loss of value can be much higher if the rubblefill is causing severe nuisance effects such as excessive truck traffic on a road adjoining the property in question or hydrogen sulfide releases are occurring. The Burnt Hills rubblefill (located fifteen miles north of the Brown site) was defeated in part because of property value impacts. Specifically, the courts found that having a second rubblefill so close to the existing rubblefill would cause a much larger loss of property value and this condition would exist nowhere else on Open Space zoned land in the County.

After searching for local real estate appraisal experts, I've been discussing the case with Jane Doe who did the property value effects study of the Burnt Hills case. Beth believes that the large amount of truck traffic on Route 999 may cause the impact of the Brown rubblefill to be unusually high when compared to all other Open Space zoned land in the County. However, Jane is not yet ready to commit to the case. I believe she will though if we can reduce the amount of time she needs to spend gathering data.

ROAD TO BE CLOSED

The State property maps show a road passing through the proposed rubblefill. Prior to surface mining on the site this road was used by area residents. Construction of the rubblefill will close the road permanently.

The Association asked a title attorney to take a look at whether closure of the road could be prevented. The attorney believes that there might have been a case for preventing this prior to mining of the site in the 1980s, but too much time has passed since area residents regularly used the road. Other Association members with extensive experience in road right-of-way issues agree. If the road were public, not private, then there would be a much stronger case for keeping it open.

BROWNVILLE CHURCH

The church is on the County's list of historic structures, but not the National Register. It was one of four African-American schools established in the County shortly after the Civil War. It is

⁴ Based on the report *The Effect of the Burnt Hills Rubble Landfill on Property Values of the Surrounding Community*, prepared by Jane Doe on behalf of the Community & Environmental Defense Services.

the only one of the four Freedman schools still standing. The rubblefill will tower 80-feet above the Church and will detract dramatically from the environment essential to the historic character of the Church.

In the County's Staff Report these impacts were dismissed because of the trees located between the rubblefill and the Church. However, County staff did not take into consideration several very important factors:

1. The trees will only screen the rubblefill from the Church for the six-months out of the year when leaves are present.
2. The densest trees are tall Virginia pines. Unfortunately, these trees are only temporary residents in a forest and will be replaced by deciduous species which will be far less effective in screening the rubblefill from view.
3. The trees are virtually all located on the property of the Church, not the applicant's property. The County assumed that the Church would never wish to use the portion of their property between the Church and rubblefill. In other words, the County has placed the Church in the position of having to make one of two very difficult choices: a) to fell the trees so this portion of the Church property can be used for other purposes, or b) to keep the trees in place to serve as a partial visual barrier from the rubblefill. This is very unfair to the Church. The County should have required the applicant to redesign the rubblefill so it cannot be seen from Church property, regardless of whether the trees are present. Instead, the County is only requiring the applicant to plant a 40-foot buffer between Church property and the rubblefill.

While the Association feels the rubblefill should not be built at all, there are other options for redesigning the rubblefill which would greatly reduce the impact. The graphic on the next page shows the existing elevation (contours) of the land surface on Church property and the applicant's property. Towering over the existing contours is the rubblefill after it is raised to the maximum elevation of 287-feet above sea level. The graphic also shows the original land surface contours as they were before the site was mined in the 1980s.

One of the options suggested by the Association is that if a rubblefill must be built on the site, then it should go no higher than the original contours. In other words, they could only landfill enough rubble on the site to bring the ground surface up to the level that existed prior to mining. As shown in the graphic, this would be a maximum of 20-feet of fill instead of the 130-feet the applicant has proposed. This would dramatically reduce the visibility of the rubblefill from the Church and it would reduce the lifespan to a fraction of the 17 years currently proposed.

Richard Klein discussed this option with the County's Historic Preservation Division, on May 12, 2000. She was deeply troubled by the impact of the rubblefill to the Church and drafted the additional comments.

The impact to the Church has also been downplayed because of the deteriorated condition of the building. The Church has been engaged in a long term restoration plan. The Church will be filing for a County Historic Area Work Permit to proceed with the most urgently needed repairs.

BROWN ENVIRONMENTAL EDUCATION CENTER

This facility is located about 1,000-feet west of the proposed rubblefill. It is said that every school child in the County visits the Center. It is believed that this is the only facility of its kind in the County.

The Center could be adversely affected through degraded air quality (truck exhaust, dust, and hydrogen sulfide), contamination of the well serving the Center (see well contamination below), loss of low background noise levels due to increased truck traffic on Route 999 and equipment operating on the rubblefill high above the Center, and loss of the rural vista due to the very unnatural look of the rubblefill towering 90-feet over the Center.

The Association has contacted the County Board of Education asking them to take a position in opposition to the rubblefill due to these impacts.

STREAM BUFFERS

The County requires a +50-foot buffer from streams. The head-of-streams appear to extend further into proposed landfill than shown on applicant's plans. Volunteers are monitoring the head-of-streams to document the extent to which buffers should be expanded into the proposed landfill.

TRAFFIC

Mining, landfills, and related facilities generate 7,000 truck trips per day in Brown County. Of this total, 27% of the truck trips occur on Route 999 - the road on which the Brown rubblefill would be located. There are a number of known or potential traffic impacts associated with the truck traffic and the proposed rubblefill. These impacts include:

Acceleration/Deceleration Lanes: There may be a need for an acceleration and deceleration lane at the proposed entrance to the rubblefill, particularly if sight-distance or traffic gaps are inadequate. However, the applicant does not own sufficient property along Route 999 to install an acceleration and deceleration lane.

Child Safety: A number of children await school buses by standing along the side of Route 999. The truck traffic generated by the rubblefill will increase the threat to the safety of these children and those riding school buses. Association volunteers should poll parents of children who wait for buses along Route 999. They should ask how parents feel about increasing truck traffic on Route 999. If the parents express concern then they should be asked to testify at the Special Exception hearing. We should also keep an eye out for tales of near-misses and other horror stories.

Failed Level of Service: The intersection of Route 999 and Route 789 is located about nine miles to the northwest of the rubblefill site. The rubblefill will add 100 to 200 truck trips per day to Route 999. It is not clear that anticipated intersection improvements will resolve this issue.

Gap Analysis: To safely make a left-turn onto Route 999 (or any road) there needs to be a six-second gap in traffic. If a six-second gap exists less than 30% of the time, then a signal or some other traffic control measure may be warranted. Association board members will be gathering data to determine the peak hour of traffic volume and speed. Association board members will then video-tape traffic during the peak-hour. We can then have a competent traffic engineer review the tape to determine if the gap is adequate.

Sight-Distance: Sight-distance is the distance from an intersection at which approaching vehicles can be seen. Generally for each mile of approaching vehicle speed 11-feet of sight-distance is needed. The sight-distance at the rubblefill access off of Route 999 appears marginal. However, we need to know the speed of approaching vehicles to determine if sight-distance is adequate. A speed study is being conducted.

Once the data described above has been gathered we need a review by a competent traffic engineer. If the Association wishes we can have our traffic engineer review these issues. His fee to do an initial review would probably be in the range of \$500 to \$750.

WELL CONTAMINATION POTENTIAL

All of the homes, schools, and other buildings in the area are served by wells. A well could become contaminated by pollutants released from the rubblefill if it is likely that groundwater would flow from the landfill to the well.

Generally, underground water flow follows the surface of the land. In other words, where the surface of the rubblefill site tilts towards the north and Pecks Swamp, underground water flow will be in this same general direction. However, this generalization is most applicable to “shallow” groundwater flow. It is less true for water moving at depths of say more than a hundred feet below the land surface. At these greater depths groundwater tends to flow in the direction of northwest to southeast. In other words, the 150- to 500-foot deep wells located southeast of the site could potentially become contaminated by pollutants released from the rubblefill.

Another factor to consider is whether dense clay layers exist above the point where water would be drawn into a well. When a well is installed the driller will “screen” it at the depth where the best water occurs. Water can only enter the well in the 10- to 30-feet of depth where the screen is located. If a dense clay layer overlies the screened depth then the well may be protected from contamination. Such clay layers do exist in the vicinity of the rubblefill, but a competent hydrogeologist is needed to determine if the layers are adequate to protect area well users.

The applicant has proposed using a liner and leachate collection system to prevent ground and surface water contamination. The liner is constructed of plastic which has about the same

thickness as a nickel. Leachate is the highly contaminated liquid formed after rainwater passes through the decomposing waste contained in the rubblefill. The collection system lies above the liner and directs the leachate flow to tanks where it can then be hauled off site for treatment. Upon completion the entire rubblefill will be covered by an impermeable (plastic) cap which will then be covered by four feet of soil.

While the liner, leachate collection system, and impermeable cap might sound like a great way to prevent pollution, there is a major flaw in this system. The liner and cap are only guaranteed for 30 years. After 30 years both will begin to deteriorate and allow more rainwater in and more leachate to bypass the collection system to flow out into surface and ground waters. The most harmful pollutants in a rubblefill are metals which remain toxic for centuries. Thus the liner-leachate collection system is only temporary protection.

Two actions are needed to pursue this issue.

First, it is crucial that we determine if, in fact, the County is preempted from considering leachate pollution impacts. It certainly seems that this is the case but our attorney is not convinced. If the attorney is right then the Association has a good issue. But if the attorney is wrong then we could use a lot of very limited resources on an issue that will be overturned on appeal.

Second, we need to have a competent hydrogeologist review the data we've compiled thus far to determine if area wells are at risk. We have a hydrogeologist who is available and willing to take an initial look. We need to get an estimate of the hydrogeologist's fee to do an initial review so the Association can decide if they wish to authorize the review