

SUMMARY

Prepared by Friends of East Flat Rock

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**Community
Opposition to
Conditional
Zoning to
enable an
Asphalt Drum
Plant for SE
Asphalt**

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1. EXECUTIVE SUMMARY AND STATEMENT OF OPPOSITION

Friends of East Flat Rock (FoEFR) represents a community of over 1,600 concerned local citizens and has the support of more than 10,293 regional and community members opposed to siting a Hot Mix Asphalt (HMA) drum-plant in the East Flat Rock (EFR) community. The FoEFR community adamantly opposes any conditional zoning that would allow such an operation based on wide range of concerns including:

- Inconsistency with community plans and zoning
- County production capacity vs market needs
- Unanswered questions regarding plant operations
- Environmental pollutants (air, water, noise)
- Ineffective and lax regulatory monitoring and enforcement
- Long-term health risks
- Traffic loads and safety risks
- Fire risks
- Commercial and residential property value loss
- Disadvantages to existing commercial operations
- Barriers to more desirable future Community Commercial development in EFR

HMA facilities are operated in accordance with Federal and North Carolina Department of Environmental Quality (NCDEQ) regulations. Those regulations are intended to limit impacts on the environment and surrounding community. However, it is also the case that the regulations accept, as a normal part of operations, that an HMA plant is an emitter of toxic gases and harmful particulate whenever it is running. The regulations seek to minimize but do not eliminate the hazards. The science associated with long-term and low-level exposure to these pollutants require in-depth studies to fully assess the environmental and health risks. However, studies that have been conducted increasingly point to detrimental effects from hosting such an operation. Other than revenue for the owners and tax revenue for the county government, surrounding residents see absolutely no benefit, but rather only potential negative impacts. This document provides detail and educational resources in defense of our position.

As a community, we know that few, if any Henderson County or East Flat Rock residents would willingly choose to have their residences or businesses near such a facility. Similarly, it's very unlikely the East Flat Rock, Flat Rock, and Hendersonville communities would be proud to have an HMA plant as the "gateway" attraction at the eastern entrance to the EFR community. We ask that Planning Board recommend AGAINST approval of the conditional zoning request and that Commissioners VOTE NO and disapprove the conditional zoning request.

2. INCONSISTENT WITH EXISTING ZONING AND COMMUNITY PLANNING

Community Planning and the associated land-use plans and zoning seek to strike a balance among the many competing demands on land by creating development patterns that are orderly and rational, provide the greatest benefits for individuals and the community as a whole and avoid nuisance conflicts between land uses. Plans allow the community to guide land-use in a way that protects valued resources such as environmentally sensitive areas, agricultural land, air, and waters from destruction or degradation by inappropriate development. Communities use comprehensive plans to protect public and private investment by ensuring development patterns are orderly and reflect the collective community vision and are supported by the community through a robust public input process. Lastly, plans can provide the community a means to create and promote policy that fosters a distinctive sense of place. East Flat Rock has a Community Plan ... let's use it.

The East Flat Rock Community plan was approved in May of 2018 as a guide to desirable community development consistent with the community character, citizen needs, and as a roadmap for planned development. The following are excerpts from the EFR Community Plan relevant to the issue of whether siting of an HMA plant is suitable under the intent of the 2018 EFR Community Plan.

"3.1 Natural and Cultural Resources

Encourage the protection of surrounding land and water resources that may not be within the East Flat Rock boundary. There are many important natural resources in the County that have a direct impact on health and quality of life within East Flat Rock. The County should support those efforts and related recommendations in adjacent community plans."

As a community with lands that are part of the surrounding area The Flat Rock Village Council unanimously recommends rejecting conditional zoning for this asphalt plant.

"The Green River Watershed is a heavily forested watershed with excellent water quality and healthy streams. This area of the County has been known for its pristine waters and is the head waters to a number of sub-watersheds."

"Laurel Branch Creek Gorge / Buckeye Ford. The privately owned site (Duke Power Company) is a site that harbors an excellent example of a Rich Cove Forest. The site is significant due to the presence of one of the best stands of basswood seen in the country."

Allowing a plant that intentionally emits tons of particulate and toxic/hazardous emissions is not consistent with protection of the local natural resources (i.e. clean air). An informal review of the plant's likely emissions with staff of the regional office of the NCDEQ Division of Air Quality indicates, that if approved and permitted, would likely be the single largest source of Toxic Air Pollutants (TAPs) in the EFR area.

"The GE/Shepherd Farm Superfund Site" "includes an active manufacturing facility, a warehouse, eight plots formerly used for waste disposal, two unlined waste treatment ponds, a sludge impoundment, and two former landfills" (http://www.toxicsites.us/site.php?epa_id=NCD079044426). Out of a great deal of concern and effort for the people of our County, "currently, contamination does not threaten people living and working near the site. The site is evaluated every five years to ensure that contamination does not spread into neighboring areas.

The East Flat Rock (EFR) area has already been negatively impacted once by industrial activity and after a great deal of determination by the community, it has finally recovered and stabilized. Choosing to site the asphalt plant in the EFR area creates a new source of particulate and airborne toxins for the community that has already endured an infamous level of contaminants. Rather than continuing to benefit from improved air quality, EFR community residents and neighbors will be pushed down the path of degraded air quality and its unquantified long-term impacts.

"Land resources in the Planning Area are limited. Approximately 13,144 acres of the Planning area's 36,933 acres (35.6%) are vacant. Development trends and future pressures, if not effectively managed, could negatively affect these limited resources."

An asphalt plant is one of the most obtrusive structures to be possibly considered in the Planning Area especially in that EFR agreed to be responsibly managed due to our already limited resources. Allowing an HMA plant on this site would not only adversely affect the visual impression one would receive about our county, but also likely discourage future commercial growth by more traditional, community-oriented businesses.

“Goal #1

N1.2. Encourage open space through voluntary conservation and development design practices”

This asphalt plant would fill a premier open space in the EFR Planning Area. Even if visually hidden, the siting of a Heavy Industrial business with the potential for odors, guaranteed air pollutants, and industrial noise will suppress development interest of businesses more responsive to a broader range of community needs. Driving from the South, tourists may be greeted by the smell of hot Asphalt as is the case today on Clear Creek Road. We ask that the Planning Board consider the image they wish to communicate to visitors entering Henderson County ... tourism and a beautiful downtown Hendersonville or welcome to our fourth Hot Mix Asphalt Plant.

“N1.3. The County should work with the appropriate State agencies to promote the area for recreation and explore opportunities for additional access to the game lands." ***Once the Green River Game Lands are tainted by an asphalt plant at their main entrance, interest in recreation in the region will decrease, having a negative impact on other businesses and county revenues.***

“N1.4. Encourage the protection of surrounding land and water resources that may not be within the East Flat Rock boundary. There are many important natural resources in the County that have a direct impact on health and quality of life within East Flat Rock. The County should support those efforts and related recommendations in adjacent community plans.”

Two of the most important natural resources are clean air and clean water. The proposed HMA plant will be a substantial emitter of microscopic airborne particulate that is known to be detrimental to lung health. Toxic Air Pollutants (TAPs) in the form of complex hydrocarbon compounds will be breathed and will precipitate into the local watershed and subsequently into the wildlife food chain. This series of events is completely inconsistent with the goal of protecting the area’s most important natural resources.

3.2 Agriculture

A.2. Reduce farmland loss within the Planning Area. (page 20).

The East Flat Rock Community Plan indicates a voluntary agriculture district across the street from the proposed site. The presence of an HMA plant emitting particulate and toxic/hazardous air pollutants. would impact the development of an agricultural resource.

3.3 Housing

"H1.2. Work with manufactured home park owners to encourage improvements to existing manufactured home parks to enhance the health, welfare, and safety of residents."

Permitting the HMA plant will intentionally degrade the health, safety and welfare of the nearby manufactured home residents through degraded air quality, heavy truck traffic, and a disincentive for the park owners to invest anything in the property due to the value loss caused by the HMA plant.

3.4 Community Facilities and Public Services

"Fire Protection: The Planning Area contains the Blue Ridge fire district (See Figure 3.4.1). The Blue Ridge Volunteer Fire and Rescue Department (BRVFRD), located off Spartanburg Highway, serves the Planning Area."

BRVFRD may not be prepared to combat an unexpected fire and prevent substantial watershed impact in the event asphalt cement or fuel ignition for the two large tanks of hot liquid asphalt (i.e. estimated 30,000 gallons) and any stored diesel or fuel oil if used for process heating. In addition, the HMA plant would create an additional dependence upon the ability of the BRVFRD, and any other auxiliary fire stations, to respond, there.

"Goal C.1 Consider providing sidewalks in commercially zoned areas.

Goal C.2 Support extensions of public water and sewer lines into East Flat Rock.

Goal C.3 Community facilities and public services should be strategically located in area identified as local commercial, industrial, and or office institutional.

Goal C.4 Improve level of service of existing and proposed parks.

Goal C.5 Form a community and regional greenway network connecting public recreational facilities within the East Flat Rock area."

Placing a Heavy Industrial facility in the area will be a strong disincentive to the County to undertake any of the proposed improvements listed in the Plan. A decision to add an Asphalt Plant will have lasting consequences for our residents who built homes in this area with a trust and expectation that the parcel would be developed in accordance with the EFR Community Plan.

3.5 Transportation

"Improve the transportation network in the East Flat Rock Planning Area. The County, through its involvement in the French Broad River MPO, should prioritize projects within the East Flat Rock Planning Area in accordance with Plan goals."

"Vehicle Crashes. Vehicle crashes may indicate congestion problems and/or be associated with the physical characteristics of the roadway.... "

"Bike Routes. NCDOT designated bike routes in the Planning Area include all or portions of US Highway 176... These designated bike routes contain no dedicated bike facilities (bike lanes or paved shoulders)"

The US 176 corridor is used by bicyclists for transit to and from Saluda. The HMA plant and associated traffic between the plant location and the potential of the Green River Quarry as an aggregate source substantially increases increase risk of truck-cyclist, car-cyclist, and car-truck involved accidents in the constricted road conditions of that curved and steep section of US 176 and is inconsistent with the transportation goals.

Additionally, on-ramp/off-ramp traffic increases from and to US 25 will substantially increase crossing traffic conditions as well as traffic slowness from loaded aggregate trucks making delivery to the site from the quarry. No turn off lanes are planned to allow trucks to exit the normal traffic patterns and speeds along US 176 in that area.

3.6 Economic Development

"County Employment by Major Industry Group: According to the Employment Securities Commission, Henderson County experienced a 5.5% decrease in total employment from 2010 to 2016. The largest industry providing jobs in Henderson County is the Service-Providing industry, followed by Education and Health Services, and finally Goods-Producing. It is worth noting that, out of these high employment industries, only one (Manufacturing) provides a living wage for 2 working parents with 1 child, according to the MIT Living wage calculator determination for Henderson County."

Due to the relatively high level of equipment automation, the total number of jobs created in plant operations by a typical modern HMA plant is 4-7 persons. There would likely be a site manager, equipment operations personnel, and heavy equipment operators to load aggregate RAP, and dry mix ingredients into the feeder hoppers. How many jobs and what job growth are we placing at risk at environmentally attractive businesses like Paramount Produce if we allow an asphalt plant to occupy that large parcel in an area that would more likely develop a wider range community services at the US25/US176 intersection?

"Create East Flat Rock gateway entrances on Spartanburg Highway and Upward Road"

Here again, FoEFR does not think the Heavy Industrial appearance of the proposed HMA plant serves as a desirable "gateway" message for visitors to the community or as a primary entry corridor to the Hendersonville community. It does not communicate small town, rural, natural beauty, or a clean environment ... it says heavy industrial, polluting, loud, and odorous. This is not consistent with the community goals.

"E2.2. Support existing businesses and industries."

Existing EFR community businesses are opposed to allowing the HMA plant including: GE Current, Big Rig Truck Repair, Orr's Family Restaurant, South Cross Business Park, the Highland Lake Inn & Resort and Paramount Produce. Additionally, there are 3 existing asphalt manufacturing companies in Henderson County and based on 2018/2019 records are only running at ~25% of their total permitted capacity. A 4th plant may impair the economic viability of those businesses.

"Goal E3.1. Revitalize Downtown East Flat Rock into a destination for shopping and dining."

An asphalt plant within the East Flat Rock community service center will deter shopping and dining development – the opposite of stated goal E3.1 of our EFR Community Plan.

3.7 Land Use and Development

"Community Commercial (CC)... Also connect the CC zoning south of Roper Road to the existing CC near the interchange at Spartanburg Highway and US 25."

The EFR Community Plan specifically mentions the Community Commercial zoning at the US 25/US176 interchange and does not propose any changes or consideration of any heavier industrial use in this area than previously designated Community Commercial.

"The EFR Planning Area contains 347 acres in commercial use and 143 acres considered commercial vacant."

FoEFR encourages the Planning Board advocate improvements to an existing site already hosting asphalt plant operations as more suitable from a neighborhood compatibility perspective than burdening new areas with heavy industrial operations.

3.8 Community Character and Design

"One challenge will be balancing future growth with the existing character of the neighborhood"

An asphalt plant due to its nature as "Heavy Industry" is not fitting with the goal to achieve a neighbor character. As one travels across the United States, one finds heavy industry being segregated far from residential or commercial that supports a community function.

"Existing Design Standards: Rural community character is impacted by residential and nonresidential (commercial, office institutional and industrial) uses and developments.... Any new development must comply with any requirements outlined in the LDC, and include: buffers.

Buffers are required to separate industrial, commercial (including office institutional), and residential development"

Heavy Industrial operations such as the proposed HMA plant create substantial noise, airborne pollutants, visual, and odor conditions that can and do extend well past the site boundaries regardless of the buffer size. Impacts can extend for 1000's of feet from the site. Wind and precipitation conditions can deposit toxic/hazardous pollutants across the neighboring areas. The existing industrial operations in the EFR Planning area are largely what would be considered light industrial operations and are very limited air pollutant emitters. The HMA plant would not be in keeping with the character of the EFR area and it would be impossible to isolate from the community without buffers on the order of a mile or more from other businesses and residences.

"The County should adopt lighting regulations to mitigate the negative impacts of lighting and preserve the Planning Area's rural character and natural setting. Lighting mitigation standards should be enforced to prevent light from nonresidential property from shining onto residential property."

For nighttime contracts with NCDOT this plant will have to be illuminated for safe operation even if HMA is only produced during the day and dispensed from storage at night. Outdoor Industrial sites can lead to spill light, trespass and skyglow lighting to the surrounding homes and areas adjacent to this planned site unless constrained by strict lighting ordinances, post construction inspection, and enforcement actions when needed.

3. ASPHALT CAPACITY VERSUS MARKET NEEDS

Does Henderson County really need a *fourth* Hot Mix Asphalt production facility?

There are already three asphalt production facilities sited in Henderson County (APAC, Rogers, and Tarheel), as well as HMA plants in Tryon and in Traveler’s Rest, SC, and additional operations in Buncombe County which can serve our road construction and maintenance needs. Asphalt can be produced and transported 25-50 miles from its point of production and all these facilities are within trucking distance to roadwork in some portion of Henderson County and I-26. The combined permitted capacity of the Henderson County sited operations alone is 950,000 tons of asphalt per year based on their North Carolina Department of Environmental Quality (NCDEQ) permits and well over 1.5 million tons if the other facilities are considered.

Even considering the short-term demands of the I-26 expansion and its need for approximately 250,000 tons of asphalt for the Henderson County segment per the North Carolina Department of Transportation (NCDOT), it appears that excess HMA production capacity already exists within the delivery distance limitations of existing facilities. Based on 2019 inspection documentation provided by NCDEQ for the most recent available production year totals, the combined production of HMA by the existing Henderson County operations totaled 237,498 tons (75,830 tons – APAC/2018 and 119,477 tons – Rogers/2017 and 42,191 tons – Tarheel/2018). That quantity is less than 25% of the NCDEQ permitted capacity for those plants. The existing plants are substantially under-utilized and adding additional capacity in the county will simply further split market share of the existing 3 producers lowering their ability to operate profitably.

In short, Henderson County and East Flat Rock do not need to accept health and environmental risk or sacrifice quality of life by the alteration of air/water quality, homeowner property value, and future development opportunities to ensure it has enough competitively priced asphalt to pave our roads. We obviously already have much more capacity than is needed.

4. QUESTIONS ASKED/QUESTIONS UNANSWERED

As part of the planning process FoEFR members participated in both the Neighborhood Compatibility Meeting and the associated Technical Review Committee Meeting for the proposed SE Asphalt plant. During these meetings community members concerned with the impact of such a facility on East Flat Rock and surrounding communities raised a wide number of questions. These questions were regarding the plant details such as equipment, operating hours, hourly, daily, and annual production volumes, and other aspects of planned operations that are informative and critical to allow the community to understand the true impact of the proposed facility. For the most part, during the meetings, the applicant, the applicant's attorney, and the applicant's agent were largely incapable of or unwilling to answer questions with any substantive detail and some of the answers provided appeared to be inconsistent with normal assumptions about how such facilities are operated and what HMA customer's expect.

Questions included:

1. What maximum HMA capacity of proposed plant and equipment in tons per hour?
2. What are the requested annual and daily production limits?
3. What is the planned aggregate dryer heat capacity in million BTU per hour?
4. What is the planned Asphalt Heater heat input per hour in million BTU per hour?
5. What is the planned stack gas flow rate for the planned equipment in ACFM?
6. What is the planned stack gas temperature in degrees F
7. Will the plant be NSPS Subpart 1 affected?
8. What is the planned NSPS Subpart 1 Method 5 emission rate?
9. Will there be on-site RAP crushing and if so, what is the capacity in tons per hour?
10. Will there be on site Silo filling and what are the Silos and their storage capacity?
11. What fuel or power sources will be used for the following processes: A) asphalt storage tank heat; B) aggregate Drying and HMA Mixing; C) HMA Storage if heated.
12. If using Fuel Oil for process heating, what grade (No. 2 or Waste No. 4 or 6) and what will be the Sulphur content?
13. What are the peak and average decibel levels of noise created at the plant by combined noise emissions from mobile equipment, backing alarms, engine noise, trucks (engine noise at acceleration from stop), and stationary equipment (e.g. pumps, burners, motors, fans, bag house pulse, etc.) at the site property lines.
14. How will the TRC assess the level of and distance from the facility that odors will affect the community under the normal range of local weather conditions and potential wind patterns?
15. Will there be truck bed lubricant applied to on-site and if so, what lubricant(s) will be used and how much lubricant per truck will run off and enter the watershed?

16. Will there be equipment cleaning chemicals used on site and exactly what are they?
17. What is the planned total capacity of tanks for hot asphalt and what containment measures will be required on the site to prevent watershed impacts in the event of a major hot asphalt tank leak or spill?
18. What is the lighting plan for the facility? Will it be required to be a zero direct uplight design (i.e. Dark Skies Friendly), and will it be run all night at full light output, or will it be dimmed or off if the plant is not operating?
19. What are the projected emissions under federal regulations based on maximum hourly capacity?
20. When can answers to all these questions be provided?

Additional questions have come forward in the interim since the Neighborhood Compatibility and Technical Review Committee meetings including:

21. Will the equipment be new or used?
22. Will the plant exhaust stacks have silencers?
23. Will the plant drum burner(s) have silencers?
24. What will be the measured noise levels: On site, at 500', at 1000', at 2500'?
25. Will the plant be of a stationary type or relocatable?
26. Will the plant capacity be to serve only Southeastern Asphalt's needs, or will its output be available for sale to other contractors?
27. How many tons per year does SE Asphalt lay down in a typical year?
28. What is the on-site fuel storage capacity for the burner and bitumen tank heaters?
29. Will there be containment capability in case of a bitumen or fuel spill/leak?
30. How many silos will the plant have for finished product?
31. What will be the capacity of the bitumen tanks and are they vertical or horizontal?
32. Where will the bitumen be sourced from?
33. Will there be recycled asphalt pavement (RAP) stored on site?
34. Will there be any on-site RAP crushing?
35. Will there be reclaimed asphalt shingles used and stored on site?
36. At maximum capacity, how many tons of aggregate will be required in a typical day?
37. Where will the aggregate be sourced from?
38. Will the aggregate be hauled by dump truck or tractor trailer dump vehicles?
39. What mobile equipment (wheel loaders, skid steers, etc.) will be on site?
40. How will the property be secured after hours and when not in use?
41. What special measures or automated systems will be onsite to rapidly extinguish a "fire event" to avoid risk to surrounding wooded areas and residential communities?
42. What notification, alarm, and evacuation plans will be put in place to avoid loss of life and property in the event of a fire?

43. Will there be on-site diesel fuel storage for mobile equipment and if so, what will be the storage capacity?

In general, the applicant provided no direct answers and was off camera during these ZOOM meetings choosing to let his agent (Mr. Sugg), of Civil Design Concepts provide very limited answers to these detailed questions. Based on recordings of the Neighborhood Compatibility and Technical Review Committee meetings, the answers provided, paraphrased for brevity, were:

1. About 50 trucks per day.
2. Limited production hours per day unless the customer contract requires it.
3. No nighttime operations unless the customer contract requires it.
4. We will adhere to any regulatory requirements.

Those responses given the 20 questions posed during the TRC indicate that the applicant, his attorney, and his agent were not willing or able at that time, to share the realities of plant operations as they may impact the EFR community and residents living nearby. Additionally, the caveat of “unless the customer requires it,” means that if the plant needs to run 24/7 to meet a customer requirement to supply (e.g. nighttime paving) then the owner, unless otherwise constrained, might do so regardless of the impact on and disruption to the surrounding community. As the impacted community, we feel it incumbent on the applicant and his representation to fully disclose the details of plant operations as the minimum information basis upon which the community can assess the risks and impacts. Additionally, the Planning Board and Commissioners have an obligation to be similarly informed and knowledgeable to accurately assess the risks and impacts on the EFR and Henderson County communities.

Without appropriate and accurate information, the Community, Planning Board, and Commissioners cannot evaluate the potential impact on the effected communities in a fully informed manner. Without the detailed information there is no legitimate basis upon which to consider the Conditional Zoning request. Additionally, we are aware that the applicant has vacillated on his response to questions [including days and times of operation, numbers of employees, areas to be served] based upon the venue, leaving us to further question his intent. Additionally, without sufficient detail on plant operations and impacts, the Planning Board and Commissioners would be unable to assess any suitable “conditions” under which a Conditional Zoning approval could be granted. As such the Planning Board should not forward the request to the Commissioner’s for consideration and the Commissioner’s should deny the request.

5. AIR POLLUTION RISKS

HMA plants require air permits specifically because they are significant emitters of gaseous toxins and of airborne particulate of sizes small enough to cause respiratory distress and damage. NCDEQ used a standard methodology (AP-42) to evaluate the expected emissions of HMA production facilities using US EPA emissions factors and regulates their output based on placing limitations on the total hourly and annual production based on the impact of other process factors like fuel choices and equipment design. To create a profile for the expected emissions there is a standard spread sheet and methodology. FoEFR has applied this methodology to an operating scenario consistent with the permit conditions of other HMA drum-pants in Henderson County. Assumptions used for this assessment are:

- 250,000 tons per year
- Daily maximum of 961 tons
- Natural gas fired drum heater (cleanest fuel source)
- Natural gas fired bitumen heater (cleanest fuel source)
- 100 million BTU/hr. burner (typical for 250T per hour drum capacity equipment)
- Emissions controls used (best case ... pulsed bag house 99.28% efficiency)
- Counter-flow drum (best case equipment configuration)
- Asphalt temperature 325 F
- Stack temperature 240 F
- Stack ACFM 68,145
- No on-site RAP crushing
- Asphalt tank heater 10 million BTU/hr

Based on the above and applying the AP-42 methodology, the expected emissions for particulate and gaseous toxic emissions are listed in Table 1 and are annotated in Table 2 with their adverse effects on human health as stated by the US Department of Health and Human Services, Agency for Toxic Substances and Disease Registry (ATSDR). The largest TAP's by lbs/yr are bolded and italicized in Table 1 and included in Table 2.

Table 1. AP-42 Emissions Summary using **Best Case** fuel source

TOXIC / HAZARDOUS AIR POLLUTANT	CAS Number	ACTUAL EMISSIONS	
		(AFTER CONTROLS / LIMITS)	
		lb/hr	lb/yr
Acetaldehyde (TH)	75070	0.00E+00	0.00E+00
Acrolein (TH)	107028	0.00E+00	0.00E+00

Antimony unlisted compounds (H)	SBC-other	4.50E-05	4.50E-02
Arsenic unlisted cmpds (comp. of ASC) (TH)	ASC-other	1.40E-04	1.40E-01
<i>Benzene (TH)</i>	71432	9.90E-02	9.90E+01
Benzo(a)pyrene (T)	50328	4.41E-06	4.41E-03
Beryllium metal (unreacted) (TH)	7440417	0.00E+00	0.00E+00
Cadmium metal (elemental unreacted) (TH)	7440439	1.03E-04	1.03E-01
Carbon disulfide (TH)	75150	6.23E-04	6.23E-01
Chromium unlisted cmpds (add w/chrom acid to get CRC) (H)	CRC-other	1.26E-03	1.26E+00
Chromic acid (VI) (component of solCR6 and CRC) (TH)	7738945	1.13E-04	1.13E-01
Cobalt unlisted compounds (H)	COC-other	6.50E-06	6.50E-03
Cumene (H)	98828	1.14E-03	1.14E+00
<i>Ethyl benzene (H)</i>	100414	6.41E-02	6.41E+01
Ethyl chloride (chloroethane) (H)	75003	2.18E-06	2.18E-03
<i>Formaldehyde (TH)</i>	50000	7.97E-01	7.97E+02
Hexachlorodibenzo-p-dioxin 1,2,3,6,7,8 (TH)	57653857	0.00E+00	0.00E+00
<i>Hexane, n- (TH)</i>	110543	2.39E-01	2.39E+02
Hydrogen Chloride (hydrochloric acid) (TH)	7647010	0.00E+00	0.00E+00
<i>Hydrogen Sulfide (T)</i>	7783064	1.37E-02	1.37E+01
Lead unlisted compounds (H)	PBC-other	1.55E-04	1.55E-01
Manganese unlisted compounds (T)	MNC-other	1.93E-03	1.93E+00
Mercury, vapor (TH)	7439976	6.00E-05	6.00E-02
Methyl bromide (H)	74839	2.49E-04	2.49E-01
Methyl chloride (H)	74873	1.56E-04	1.56E-01
<i>Methyl chloroform (TH)</i>	71556	1.20E-02	1.20E+01
Methyl ethyl ketone (TH)	78933	1.70E-03	1.70E+00
Methylene chloride (TH)	75092	8.23E-06	8.23E-03
<i>Naphthalene (H)</i>	91203	2.47E-02	2.47E+01
<i>Nickel metal (TH)</i>	7440020	1.58E-02	1.58E+01
Perchloroethylene (tetrachloroethylene) (TH)	127184	8.01E-05	8.01E-02
Phenol (TH)	108952	1.01E-03	1.01E+00
Phosphorus Metal, Yellow or White (H)	7723140	7.00E-03	7.00E+00
<i>Polycyclic Organic Matter (H)</i>	POM	4.75E-02	4.75E+01
Propionaldehyde (H)	123386	0.00E+00	0.00E+00
Quinone (H)	106514	0.00E+00	0.00E+00
Selenium compounds (H)	SEC	8.75E-05	8.75E-02

Styrene (TH)	100425	2.40E-04	2.40E-01
Tetrachlorodibenzo-p-dioxin, 2,3,7,8- (TH)	1746016	0.00E+00	0.00E+00
Toluene (TH)	108883	4.16E-02	4.16E+01
Trichloroethylene (TH)	79016	0.00E+00	0.00E+00
Trimethylpentane, 2,2,4- (H)	540841	1.00E-02	1.00E+01
Xylene (TH)	1330207	6.04E-02	6.04E+01
Xylene, o- (H)	95476	2.57E-03	2.57E+00

Table 2. Summary of 11 largest AP-42 emissions and ASTDR identified health risks.

Toxic/Hazardous Emission	ATSDR Health Risks
Benzene (TH)	Irritant, Neurotoxin, Group A carcinogen
Ethyl benzene (H)	Possible carcinogen
Formaldehyde (TH)	Respiratory irritant, eye irritant, carcinogen
Hexane, n- (TH)	Neurotoxin
Hydrogen Sulfide (T)	Respiratory irritant, neurotoxin, possible carcinogen
Methyl chloroform (TH)	Neurotoxin, probable carcinogen
Naphthalene (H)	Hemotoxin, carcinogenicity unknown
Nickel metal (TH)	Dermatitis, respiratory irritant, carcinogen
Polycyclic Organic Matter (H)	Probable carcinogen
Trimethylpentane, 2,2,4- (H)	Carcinogenicity unknown
Xylene (TH)	Irritant, neurotoxin, carcinogenicity unknown

In addition to the above noted toxic/hazardous substances, the HMA production process emits particulate matter and common combustion by products associated with natural gas fired operations that are regulated under federal rules. These are listed in Table 3 below:

Table 3. US EPA regulated emissions inclusive of particulate.

AIR POLLUTANT EMITTED	ACTUAL EMISSIONS (AFTER CONTROLS / LIMITS)	
	lb/hr	tons/yr
PARTICULATE MATTER (PM)	8.28	4.41
PARTICULATE MATTER<10 MICRONS (PM ₁₀)	5.78	3.16
PARTICULATE MATTER<2.5 MICRONS (PM _{2.5})		
SULFUR DIOXIDE (SO ₂)	0.73	3.08
NITROGEN OXIDES (NO _x)	6.70	4.11
CARBON MONOXIDE (CO)	33.18	16.78
VOLATILE ORGANIC COMPOUNDS (VOC)	12.03	6.03
TOTAL HAP	1.39	0.70
LARGEST HAP (formaldehyde)	0.80	0.40

These US EPA regulated air pollutants are the product of fossil fuel combustion and the heating of bitumen (heavy petroleum) to high temperatures and are essentially the primary components of “smog.” To put this into perspective here are some equivalences based on US EPA data for the pollution characteristics of the average US Passenger Car.

<https://www.adeg.state.ar.us/air/planning/ozone/cars.aspx>

The HMA plant emissions for a year of operation is equivalent to:

- The PM10 (particulate matter) from running over **25,000** cars for a year
- NOx (Nitrogen Oxides) and VOC’s (Volatile Organic Compounds) emissions from running over **440** cars for a year
- CO (Carbon monoxide) emissions from running **135** cars for a year (and only this low because the plant is assumed to be running the cleanest fuel option).

From the perspective of airborne particulate, locating this plant near a residential neighborhood is like building a parking lot in your backyard for 2500 cars and letting them run 8 hours a day every day generating a “smog” of particulate and toxic combustion by-products. Creating this condition in proximity to residential communities is not consistent with residential needs] nor with the approved Community Commercial zoning of this parcel which would present a substantially more benign atmospheric pollution condition. As such FOEFR opposes the conditional zoning request.

6. REALITIES OF ASPHALT PLANT REGULATION AND MONITORING

Operation of an HMA plant in North Carolina requires an approved emissions permit from the North Carolina Department of Environmental Quality (NCDEQ) Division of Air Quality. While it requires a “permit” and is subject by law to “random inspections” those inspections are only conducted once per year and the plant is generally called on the day before or day of the inspection. The inspections are hardly random or much of a surprise visit allowing the Plant to adjust production in preparation. Additionally, the NCDEQ inspection process is comprised of a review of production volume reporting, equipment maintenance logs, and a simple visual inspection of the exhaust opacity and is seldom, if ever, an actual measurement of plant emissions performance. In the absence of a community complaint lodged with the NCDEQ, an HMA facility it is virtually never closely monitored and runs open loop as long as it makes less than the permitted limit of annual tons of HMA and isn’t emitting visible smoke on the one day

a year that inspection occurs. At the present time, due to the COVID-19 pandemic, the NCDEQ personnel are not even conducting site inspection and are executing the required records collection by phone and email.

In a review of recorded complaints versus anecdotal reports from residents living in proximity to other Henderson County Asphalt Plants we learned there was a clear disparity. Residents told us that when they did report on a regular basis, they were given a number and received no visit or action from officials. In time, they reported that there was no meaning to their complaints and instead had to find ways to adapt. Some residents moved while some increased the insulation to their homes or changed windows which might reduce the constant noise, especially at night and during other times of production. However, upon first person report, we found that many residents in the Grimesdale community experienced an oily soot like material on any of their outdoor furniture making it impossible to enjoy their yards.

FoEFR notes that the reality of regulation of these types of facilities is lax and has extremely limited ability in the absence of community and resident complaints to ensure ongoing and verified compliance with the emissions limits. There are regulations, but negligible enforcement.

7. NOISE POLLUTION RISKS

The applicant has not provided complete information on equipment and operating plans that would indicate the plant operations will not substantially increase the ambient noise levels for residents on nearby properties. Paving is occasionally a nighttime operation to reduce traffic control issues. In the absence of specific agreements on conditions, residents are left with the very real possibility that the plant may operate day or night if required by customer contracts and schedules.

Literature searches indicate that equipment with effective noise mitigation measures can be built, but such measures may not be common. Generally, HMA production operations depend on distance and site conditions (e.g. vegetative barriers) to attenuate the equipment noise and can achieve noise levels of 54-56 dB with sufficient setbacks to the property boundary. However, the EFR community is generally a much quieter ambient environment and it would not be uncommon for extended time periods day and night where the average ambient noise level is in the range of 35 to 50 db. As such, an HMA facility that exceeds those levels at the property boundary would be a persistent source of increased noise pollution for the community.

An HMA production facility contains a significant number of noise sources that can only be isolated from the surrounding community by distance and/or absorptive noise barriers. A core element of the system is natural gas or oil fired 50-100 million BTU/hr. burner, roaring at noise levels slightly lower than jet engine at 110 dB near the burner whenever the facility is processing HMA thru the drum. Large horsepower electric motors drive the drum rotation for mixing. Multiple high horsepower motors, gearboxes, and drive components power conveyors to load raw and processed materials, and blowers for dust filtration equipment. Additionally, heavy mobile equipment moves and loads aggregate from large stock piles on the site to the feeder hoppers creating diesel engine noise from repeated lifting and accelerating loads from place to place as well as OSHA required back up alarms on this equipment that are typically over 100 dB whether tonal (beeping) or white noise (static burst) types.

Studies indicate that use of tree belts as indicated on the site plan for the buffer zones on the site perimeter can achieve 5-8 dB of attenuation for each 100 ft of tree belt depth. However, 5-8 dB does not appear to be sufficient to ensure the equipment does not become a primary source of noise pollution in the EFR area. Acoustic pressure attenuates as $1/r^2$ but if equipment such as the burner emits acoustic pressure levels near 110 dB at approximately 1 meter from the burner, then the distance required to lower the noise level to below 50dB exceeds 1000 meters (i.e. over 0.5 miles) and more to achieve averages in the range of 45 dB as residents may be accustomed to during morning, evening, and nighttime hours.

Only equipment intentionally designed to manage noise levels from the burner, drum and conveyor and vibratory equipment motors, exhaust and intake stacks is likely to avoid increasing noise pollution levels for the community. Additionally, that does not address relatively loud but periodic events such as heavy equipment backing alarms and diesel engine noise from heavily loaded trucks and front-loaders accelerating from stop for which there is no mitigation method and will occur any time operations are active on the site.

Based on the currently available information, the nature of heavy industrial HMA plant equipment, and the proximity of the site to local residential areas, even with special measures the plant would operate at a noise level inconsistent with expectations of any other residents in our county. Therefore, we the FoEFR have considerable concern that altering the land from zoning as a Community Commercial development would not only create an alteration to our environment, but also create a situation which could be viewed as a concern of inequity and social injustice. The FoEFR suggest that the Conditional Zoning request be denied based on yet another criterion.

8. WATER POLLUTION RISKS

The NCDEQ water quality division will require the plant to have storm water management features for normal runoff from the facility that could be contaminated by diesel fuel, fuel oil, cleaning solvents, dust, or precipitated toxins from air emissions. However, that does not ensure a catastrophic event (e.g. an asphalt or fuel fire) will not create risk for the watershed. In the event of a fire, local fire-fighting resources such as the Blue Ridge Fire & Rescue would be called on to extinguish the blaze. Free burning bitumen (tar), fuel oil, or diesel fuels could be involved. Aside from the atmospheric pollution of black acid smoke created by such an event, water runoff and possible fire-fighting foams from such an event would be very polluted and likely exceed the capacity of the on-site water management measures to contain the resulting water pollutants. While risk of fire is intended to be low due equipment design features, such events do occur, even in North Carolina and we would prefer the risk of 30,000 gallons of burning bitumen not be created in our community in the first place.

Blue Ridge Volunteer Fire & Rescue may not be prepared to combat an unexpected fire of the magnitude presented by the quantities of flammables on the proposed site quickly enough to prevent substantial watershed impact in the event asphalt cement or fuel ignition for the two large tanks of hot liquid asphalt and any stored diesel or fuel oil if used for process heating. Such an industrial operation is not consistent with the intent or risk presented by typical Community Commercial businesses. The aftermath of events with an Asphalt fire located directly next to homes could create potential harm to people and property.

9. LIGHT POLLUTION IMPACTS

Industrial sites are not known for adhering to good lighting practice. In communities that lack well defined and technically thorough lighting ordinances, industrial facilities tend to default to the most egregious and detrimental lighting practice. Over-lighting, lack of shielding, and use of flood lighting as a default tends to create spill light and light trespass. Appropriate controls to dim or extinguish lighting when the site is not occupied are seldom used on industrial sites as they are frequently assumed to be 24/7 operations.

Lack of good lighting practice on these types of sites contributes to detrimental impacts of Light-At-Night (LAN) disrupting the natural circadian cycles of humans, flora and fauna on the site and in adjacent areas of light trespass and contributes to skyglow in the community.

FoEFR notes that there are residences above and below the planned grade of the site that may be subject to spill light and localized skyglow if the lighting is not properly shielded and operated under appropriate time and occupancy-based control systems.

While all businesses could and should implement appropriate lighting design and controls, industrial business are generally less compatible with the lighting needs of residential communities and are more problematic with respect to creating LAN issues than more typical Community Commercial businesses.

10. HEALTH RISKS

The Friends of East Flat Rock has been diligent in our effort to provide the Planning Board and County Commissioners the most accurate information available and trust that knowledge about effects upon the health of current and future residents are compelling reasons to oppose the conditional zoning of land to introduce an Asphalt Plant to a highly populated area. It is a fact that HMA plants emit low levels of toxic and hazardous air pollutants such as Sulfur Dioxide, Nitrogen Oxide, Carbon Monoxide, Toxic Air Pollutants (TAPs) and Volatile Organic Compounds (VOCs) as well as industrial noise pollution from equipment as normal by-product of the HMA manufacturing process. The list of 49 regulated pollutants has been previously provided in this document for reference (see Air Pollution Risks). Equipment design, site design, Federal, and NC state regulations do not eliminate these emissions, but attempt to limit the emitted quantity to keep concentrations in the environment below levels deemed by the US EPA as detrimental to human health.

The environmental and health experts in our country choose to draw conclusions based on relationships from scientific data. There is significant evidence in the literature that the presence of these emissions increases the health risk to the EFR community. Quite simply, in the absence of such a facility, the population would not be exposed to these pollutants. EPA studies of the toxicity and carcinogenic potential from long-term exposure to low levels of the particulate and toxins are not readily available. That does not mean there is no effect or risk, it just means that it is difficult to study and has not been thoroughly investigated. What we can provide are references that illustrate likely correlation and some linkages that appear to indicate causality. We know is that Asphalt Plants emit dangerous substances and microparticles, sometimes too small to measure. When our residents breathe, eat and drink contaminants on a regular basis, they are excessively and unnecessarily exposed to chemicals and particulate that can cause disease. Several studies have shown effects such as:

- Increased rates of lung and brain cancer with long-term exposure to asphalt emissions.
- A potential link between hydrogen sulfide and suicides due to biological plausibility. The study notes that hydrogen sulfide affects brain neurochemistry as a direct gaseous neuromodulator that potentially affects mood states and the psychological stress response. In animal studies, it has been shown to alter the neurotransmitters serotonin, norepinephrine, dopamine, aspartate, and glutamate levels.
- Evidence of the detrimental health effects of particulate matter including respiratory symptoms (airway irritation, coughing, aggravated asthma, and decreased lung function), cardiovascular problems (heart attacks, irregular heartbeat), cancer, premature delivery, birth defects, and premature death and the potential for gene mutation.
- Evidence that smaller particles, nanoparticulate pose a greater danger of penetrating other organs beyond the lungs. For example, soot nanoparticles (diameter less than 0.1 μm) emitted by diesel engines may be coated with carcinogens such as Polycyclic Aromatic Hydrocarbons (PAHs) which enter the brain (Donaldson et al., 2005; Prajapati and Tripathi, 2008).

The references below provide context from the medical community about the ongoing study of these conditions and the developing body of knowledge about risk and effects of long-term exposure of the population and the environment to low-level toxins and hazardous compound and particulate. At the least, their counsel is to follow the science and when in doubt err on the side of caution.

The Lancet - Scientists call for US EPA to reconvene expert panel on particulate matter pollution

[https://www.thelancet.com/journals/lanres/article/PIIS2213-2600\(19\)30221-8/fulltext](https://www.thelancet.com/journals/lanres/article/PIIS2213-2600(19)30221-8/fulltext)

“To me, a key question about how science should be applied in the public interest is whether regulations should be based on the holistic judgments of selected experts or on sound scientific method, including independently verifiable tests of predictions based on data”, Cox said. “I believe that sound science and the public interest are best served by applying sound scientific method, even if it conflicts with authoritative consensus judgments and convictions of respected experts.”

American Thoracic Society

March 2019, meeting on behalf of the American Thoracic Society. “There are two great ironies in the stated concerns of individual CASAC (EPA Clean Air Scientific Advisory Committee)_members regarding the reproducibility of the conclusions in the ISA (Integrated Scientific Assessment)”, said Cromar. “First, major conclusions of the ISA (including the causal relationship between particulate matter and mortality) have already been

reproduced many times by independent, systematic reviews of the scientific literature. The second irony is that no other grouping of seven qualified experts to serve on CASAC would ever come to the same conclusions or reproduce the fringe views expressed in CASAC's review of the ISA.”

The Lancet – The environment we live in, Nov 2017

<https://www.thelancet.com/action/showPdf?pii=S2468-2667%2817%2930199-8>

According to the World Health Organization ([WHO's) latest environmental burden of disease assessment, 12.6 million individuals die worldwide every year because of unhealthy environment. The Global Burden of Disease Study estimates that disease caused by all forms of pollution was responsible for 268 million disability-adjusted life years in 2015. By far, air pollution is the largest contributor to pollution-related diseases and deaths, but water pollution and toxic occupational exposure pose the next largest risks.

“Government leaders who might be tempted by the siren call of deregulation, blinded by its promised short-term economic benefits, and pressured by powerful vested interests opposed to any form of environmental control, need to pay attention to these findings.” For too long, environmental protections have been considered burdensome and antinomic with economic growth. The Lancet Commission on Pollution and Health, co-led by Landrigan, dispels this myth, estimates the global costs of premature deaths due to environmental pollution to be more than US\$4.6 trillion per year—6.2% of global economic output, and offers actionable and cost-effective solutions to tackle these substantial health and economic losses.”

The Lancet - Exposure to air pollution during childhood and risk of developing schizophrenia: a national cohort study

[https://www.thelancet.com/journals/lanplh/article/PIIS2542-5196\(20\)30004-8/fulltext](https://www.thelancet.com/journals/lanplh/article/PIIS2542-5196(20)30004-8/fulltext)

For example, exposure to nitrogen dioxide (NO₂) and particulate matter (PM) during pregnancy and childhood has been linked with poorer neurological and cognitive development, and an increased risk for autism. Air pollution can target the central nervous system [CNS] through multiple pathways. Inflammation and oxidative stress have been suggested as the common underlying mechanisms through which air pollution can induce neurotoxicity, contributing to an elevated risk of developing neurodevelopmental and neurodegenerative disorders. With this the prospect of exposure to the pollutants from an Asphalt Plant wrongly placed next to homes with actual inhabitants, can easily cause degenerative disease in our children. This is a risk clearly not worth taking.

The Lancet - The Lancet Commission on Pollution and Health

[https://www.thelancet.com/journals/lancet/article/PIIS0140-6736\(17\)32345-0/fulltext#bib164](https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(17)32345-0/fulltext#bib164)

Pollution disproportionately kills the poor and the vulnerable. Nearly 92% of pollution-related deaths occur in low-income and middle-income countries and, in countries at every income level, disease caused by pollution is most prevalent among minorities and the marginalized. Children are at high risk of pollution-related disease and even extremely low-dose exposures to pollutants during windows of vulnerability in utero and in early infancy can result in disease, disability, and death in childhood and across their lifespan. Pollution is costly. Pollution-related diseases cause productivity losses that reduce gross domestic product (GDP) in low-income to middle-income countries by up to 2% per year. Pollution-related disease also results in health-care costs that are responsible for 1.7% of annual health spending in high-income countries and for up to 7% of health spending in middle-income countries that are heavily polluted and rapidly developing. Welfare losses due to pollution are estimated to amount to US\$4.6 trillion per year: 6.2% of global economic output. The costs attributed to pollution-related disease will probably increase as additional associations between pollution and disease are identified.

Increased Suicide Rate is Possibly Linked to Chemicals Released from Nearby Asphalt Plants, Published December 10, 2004 | Updated January 20, 2016

<https://corporate.dukehealth.org/news-listing/increased-suicide-rate-possibly-linked-chemicals-released-nearby-asphalt-plants>

In addition to suggestions of an increased suicide rate, the incidence rate of primary brain cancers in these neighborhoods from 1995 to 2000 showed an increase about 6.4 times greater than expected for the population, possibly due to benzene and other solvent exposures. Several studies have shown increased rates of lung and brain cancer among workers with long-term exposure to asphalt emissions, the researchers said. Weisler and his study team made a hypothetical link between hydrogen sulfide and suicides due to biological plausibility. They noted that hydrogen sulfide affects brain neurochemistry as a direct gaseous neuromodulator that potentially affects mood states and the psychological stress response. In animal studies, it has been shown to alter the neurotransmitters serotonin, norepinephrine, dopamine, aspartate, and glutamate levels.

Particulate Matter

<https://www.sciencedirect.com/topics/earth-and-planetary-sciences/particulate-matter>

“Particulate Matter Standards: Particulate matter (PM) pollution consists of solid particles and liquid droplets in air, and may include mixtures of organics, acids, metals, minerals, and elemental carbon. Larger particles such as soil, sand or dust may be seen by the naked eye, while others are microscopic in size. PM that is regulated is at least seven times smaller than the width of human hair. Health effects of PM include respiratory symptoms (airway irritation, coughing, aggravated asthma, and decreased lung function), cardiovascular problems (heart attacks, irregular heartbeat), cancer, premature delivery, birth defects, and premature death. Smaller particles pose a greater danger of penetrating other organs beyond the lungs. For example, soot nanoparticles (diameter less than 0.1 µm) emitted by diesel engines may be coated with carcinogens such as Polycyclic Aromatic Hydrocarbons (PAHs) and enter the brain (Donaldson et al., 2005; Prajapati and Tripathi, 2008).

PM has other adverse impacts. Fine particles are the main cause of haze, which reduces visibility in urban areas. Due to the influence of long-range transport, haze can also affect otherwise pristine areas such as national parks and wilderness. When deposited to the surface, PM can change the acidity and nutrient balance in soil and surface waters, damage vegetation and affect the diversity of ecosystems. Particle pollution can also cause aesthetic damage to buildings and culturally important objects and contribute to climate change by altering the radiation balance of the earth’s atmosphere.”

World Health Organization – Concise International Chemical Assessment Document 59 ASPHALT (BITUMEN)

https://www.who.int/ipcs/publications/cicad/cicad59_rev_1.pdfWHO

This chemical assessment investigated the overall implications of worker exposure to bitumen. The general assessment indicated that while there was no statistically significant increase in mortality rates, it did show increased incidence of death from lung, head, and neck cancers versus similar populations of workers not exposed to bitumen.

FoEFR cannot conclusively argue that the levels of these pollutants emitted by the proposed HMA plant will immediately cause these health effects based on definitive studies. Some residents with high sensitivity to particulate and respiratory distress could be directly and acutely effected. The point is: ***we will not know until it too late***. Regardless, we can say that the medical and health community is increasingly concerned about the increased risk and is increasingly demonstrating apparent correlation in communities effected by persistent air

pollution from particulate matter and toxic air pollutants representative of HMA emissions and as a matter of “precaution” the community does not want to accept the risk.

Of particular concern is the age structure of the EFR population is primarily adults aged 65-84 years with a likely increase in numbers as the area in and around the parcel of land attracts many retirees. Consistent with the U.S. age distribution, there is a significant burden in terms of morbidity, mortality, and costs related to cardiovascular diseases (CVD). Ambient air pollution (AAP) and particulate matters (PM) have been closely associated with adverse health effects such as respiratory disease and cardiovascular diseases which are more pronounced among the elderly leading us to conclude that an Asphalt Plant will clearly influence the health of those residents.

We believe that the Planning Board and County Commissioners should place more value on health and well-being of the community and its citizens than the single economic benefit to one company. In cases such as this with significant scientific uncertainty (lack of or difficult to study), but risk of irreparable long-term harm, applying the “Precautionary Principle” is the most appropriate course of action. The Precautionary Principle says:

When there is substantial scientific uncertainty about the risks and benefits of a proposed activity, policy decisions should be made in a way that errs on the side of caution with respect to the environment and the health of the public. This property as zoned and if developed with businesses consistent with the “Community Commercial” development designation, would substantially lower the risk to the EFR community to health impacts from the pollutants and offer to maintain the well-being of the environment.

11. HEAVY TRUCK TRAFFIC INCREASE AND ACCIDENT RISK

Existing HMA production facilities in Henderson county are permitted for annual production volumes ranging from 250,000 to 400,000 tons per year. Assuming normal operations are weekdays, and that activity is not in winter months, this corresponds to about 195 production days per year. Based on an annual volume limit of 250,000 tons per year similar to the **lower end** of permits for the other 3 HMA plants that means daily shipments of up to 1,282 tons per day could be allowed.

So, what does that mean with respect to anticipated truck volume in and out of a typical HMA site on a daily basis assuming the plant is used at its permitted capacity?

- A typical dump truck is rated to haul 28,000 lbs which is 14 tons (~ 6-7 cu yd of HMA).

- Average daily production is 1282 tons at permitted plant capacity
- $1282/14 = 91$ trucks per day with outbound loads of HMA
- Approximately 45 semi-trailer trucks per day of inbound raw materials (~12 cu yd each)

That's a 14- or 28-ton truck entering or leaving the site about once every 3-4 minutes in an 8-hour shift. It's unlikely that this will happen uniformly, so there will be peaks and valleys of truck traffic. Scheduling and traffic management at the site should be provided by the owner to avoid truck congestion on US176 queuing up for entry to the plant.

The sources for aggregate to supply the proposed plant could be Vulcan Industries or the Green River Quarry. [\(Shipman has stated it will be from Vulcan. Let's quote him and edit accordingly.\)](#) If Green River is the primary source, then approximately 45-90 trucks per day will be exiting the quarry and braking downhill at "Deadman's corner" and climbing fully loaded up the US176 grade and s-curves to the US 25 bridge. If sourced from Vulcan Industries on Clear Creek, then fewer but larger trucks would be traveling to the site but still increasing traffic and loads on a short section of US176.

FoEFR is concerned that the increase in heavy truck traffic is not being given sufficient consideration with regard to impact and accident risk created by the potential need for wide turning radius, queueing into and out of the facility, and visibility up and down US176 under current speed limits. Visibility would be even more of a danger at night and early morning fog that tends to be prevalent in that area. Community Commercial development as zoned would not generally create a similar levels of increased heavy truck traffic.

12. FIRE HAZARDS

HMA Plants store large quantities of flammable heated bitumen and smaller quantities of diesel fuel for mobile equipment operations. It appears a decision has not yet been made with respect to use natural gas or fuel oil as the process heating fuel. It is estimated that the site may contain approximately 30,000 gallons of bitumen maintained at a temperature of over 250 F and a quantity of diesel fuel on the order of several hundred gallons. A high BTU natural gas or fuel oil fired heater maintains the bitumen temperature to keep it liquid and ready for use. If fuel oil ends up the primary fuel source, then a large capacity fuel oil storage tank will be present on the site. If these flammable materials are ignited thru operator error or equipment malfunction, local fire departments could be overwhelmed with the event. Accounts of such a fire in Statesville, NC in 2019 required response from 13 engine companies to control and extinguish the blaze. Such industrial fires at asphalt facilities are not common but do occur. Over 10 such fires have occurred at HMA facilities in the 2019/2020 period and such an event could be catastrophic. Here is a list of recent events across the US:

Statesville, NC – Aug 6, 2019:

<https://www.wsocvtv.com/news/local/13-agencies-respond-to-major-fire-in-statesville/973246419/>

Berea, KY – May 10, 2020:

<https://www.wtvq.com/2020/05/10/explosion-reported-asphalt-plant-madison-county/>

Gloucester City, NJ – June 30, 2020:

<https://www.nbcphiladelphia.com/news/local/new-jersey-asphalt-fire-plant/2451331/>

Nantucket, MA – March 12, 2020:

<https://www.newsbreak.com/massachusetts/nantucket/news/1525973089559/fire-breaks-out-in-asphalt-plant-oil-burner>

Augusta, KS – Feb 11, 2020:

<https://www.ksn.com/top-stories/fire-crews-battling-3-alarm-asphalt-business-fire-in-augusta/>

If local fire departments are unable to rapidly extinguish the blaze there is high risk that such an event could spread to neighboring properties, endangering human life and structures.

Uncontrolled burning of bitumen and diesel fuel are highly polluting events with large volumes of black acrid smoke containing toxic and hazardous compounds and would likely force evacuation of nearby residences. The fire at an asphalt plant in Statesville, NC last August cited above required the application of foam from trucks dispatched from their airport.

According to Henderson County Fire Marshal Kevin Waldrup, foam trucks would come here from the Asheville Regional Airport. That is at least 30 minutes away under the best of conditions. The polluted runoff from water and fire-fighting foams used to control and extinguish the fire will necessarily be discharged and flow into the local watershed unless the site is designed for a worst-case fire scenario for water retention and treatment.

For fire prevention and mitigation purposes these kinds of operations need more physical separation from adjacent properties and site measures to capture and retain polluted liquids on the site rather than allow the accident to damage the surrounding areas.

For the above state reasons siting such an operation in proximity to multiple residential areas is not advisable nor is it consistent with the planned and approved zoning for the site. The site is zoned Community Commercial which would not generally bring similar risks to the community. Use of the site for an Industrial operation will substantially increase risk to life and damage to properties in the event of an industrial accident and is not consistent with the EFR community development plan.

13. REAL ESTATE VALUE IMPACTS

Evaluating the potential impact of allowing an HMA plant to be sited near residential communities is difficult. It is hard to conduct the controlled economic studies that would clearly quantify the impact in any given community situation.

However, it is also intuitively obvious to property owners that it will not improve their quality of life and will likely have a negative impact on their property values. Estimates of the impact of such an operation on residential property values nearby range from 10% to 35%. A study by the federal Department of Health and Human Services referenced below was conducted and published in 2015 assessing the impact of industrial operations that have toxic emissions on the property value impacts on surrounding communities.

Currie J., Davis L., Greenstone M., Walker R. (Feb 2015) Environmental Health Risks and Housing Values: Evidence from 1,600 Toxic Plant Openings and Closings. *America Economic Review*, 105(2): 678–709. doi:10.1257/aer.20121656.

This study included approximately 1600 facilities with toxic emissions and their surrounding communities across the US. While the published content did not list all the toxic emissions materials, there were several listed including benzene, nickel, methylene chloride, toluene, and others that are consistent with the AP-42 emissions summary for the proposed HMA plant. This makes some sense in that many of these operations burn or process petroleum to create their products. Based on that similarity FoEFR judges the HHS funded economic assessment to provide the most relevant review of likely home value impact and to be germane to the issue of an HMA plant in EFR. The economic assessment indicates that property value losses can be expected to be in the range of 11%.

FoEFR conducted an assessment of property values within 0.5 miles of the proposed HMA plant site based on Henderson County records. There are 335 properties within a 0.5-mile radius of which 272 were shown on the county records for value and taxes. The net value of these 272 properties was \$51.68 million supporting a county tax revenue of \$352,794. Based on an estimated value loss of 11% per the HHS sponsored study, the net loss in property value to property owners within 0.5 miles of the site is \$5.68 million dollars or an average loss of \$20,903 per property owner.

As a simple issue of fairness, FoEFR notes that existing property owners are being confronted with the likelihood of combined property value losses of \$5.68 million AND exposure to undesirable impacts to quality of life factors such as air quality to accommodate a Conditional Zoning request that it not consistent with the existing EFR Community Plan. There is no positive benefit to the 335 existing property owners that are negatively impacted by an approval of this Conditional Zoning request.

FoEFR hopes that the Planning Board and Commissioners will see the wisdom in conserving this land for better uses and deny the conditional zoning request in the best interests of the Henderson County and East Flat Rock communities.