

Thurston County 2018-2019 Comprehensive Plan Docket Item #11
Nisqually Subarea Plan - Recycled Asphalt Policy E.5
HERRERA ENV. CONSULTANT LITERATURE REVIEW
June 20, 2019

The summary provided is intended to capture the main points of a public comment and is not intended to be a verbatim representation of the comment. Please see the referenced comment for the full public comment. If a comment is not listed, but was submitted as part of the record, please contact Thurston County staff as soon as possible.

Comment Number	Name	Comment Summary	Staff Response
1	Howard Glastetter	Woud like to submit a final variation of a comment made over the past several years on the Nisqually Valley issue in an attached comment emailed on March 5, 2017 in response to Goal E-5 of the Nisqually Subarea Plan. The no-RAP provision was designed to protect the rural character from industrial dominance. Three sites were referenced as having business impacts. There are ongoing concerns with flooding and the impact on water quality. The best practice for using RAP in asphalt production is to keep it dry under an un-walled building or a cover that allows air in, but keeps moisture out. Lakeside RAP storage at Hogum Bay does not meet "Best" or even "Second Best" practices.	Comment noted. Confirmed Receipt
2	EJ Zita	Would like to be added to the mailing list.	Added to mailing list. Confirmed Receipt and responded to clarify June 20, 2019 meeting format.
3	Howard Glastetter	Is unable to attend the meeting and would like the comments sent in attached document available at the meeting. Noted that the literature review was even-handed and concluded that RAP leaches chemicals and is an issue of concern, albeit somewhat minor in this area. Prefaced with a comment on the Lakeside operation at Holroyd Gravel Mine and that the operation is state of the art, rarely smells of any hot asphalt; Lakeside is a good neighbor. Commented on Toxicity Testing in New Jersey on page 10, referring to permeable soiled gravel mines; notes that highly acidic mining environment could be interpreted as coal mines, but did research that shows there are no major coal mines in NJ and metal mining is a thing of the past, so the assumption should be toxicity testing as it relates to permeable soiled gravel mines.	Comment noted. Confirmed Receipt

Thurston County 2018-2019 Comprehensive Plan Docket Item #11
Nisqually Subarea Plan - Recycled Asphalt Policy E.5
HERRERA ENV. CONSULTANT LITERATURE REVIEW
June 20, 2019

The summary provided is intended to capture the main points of a public comment and is not intended to be a verbatim representation of the comment. Please see the referenced comment for the full public comment. If a comment is not listed, but was submitted as part of the record, please contact Thurston County staff as soon as possible.

Comment Number	Name	Comment Summary	Staff Response
	Howard Glastetter (cont'd)	<p>Notes that he knows of 3 homes in the Valley below Holroyd's mine with red/brown turbidity, which is most commonly iron contamination according to the link provided.</p> <p>Also, page 19 relating to Cu and Zn tests exceeding U.S. EPA WQLs. Notes asphalt roofing shingles are also recycled, and some come with copper to prevent moss buildup, as well as landowner introduced zinc.</p> <p>Nisqually Valley is a wellhead protection area, and a rural area. Residents get their water from wells. Lacey City well is close to Lakeside's asphalt plant, which sits in the permeable soil of Holroyd's gravel mine. RAP deliveries to the pit would also mean increased truck traffic. Mentions "this site is a very sensitive part of the valley and could become a stressed one."</p> <p>If RAP were ever allowed, it should be under cover and out of the weather before and during its use. Please see a past comment on RAP that I resubmitted May 24, 2019. It shows weather protection is an industrial "Best Practice".</p>	

Thurston County 2018-2019 Comprehensive Plan Docket Item #11
Nisqually Subarea Plan - Recycled Asphalt Policy E.5
HERRERA ENV. CONSULTANT LITERATURE REVIEW
June 20, 2019

The summary provided is intended to capture the main points of a public comment and is not intended to be a verbatim representation of the comment. Please see the referenced comment for the full public comment. If a comment is not listed, but was submitted as part of the record, please contact Thurston County staff as soon as possible.

4	Kyler Danielson, Lakeside Industries	<p>RAP materials have been successfully recycled since the 1970s. Herrera analyzes the potential for leachate and generally concludes that the impact to the environment from RAP is limited or negligible. The review includes several inaccurate statements and excludes important information which may create unnecessary cause for concern. Additionally, Herrera did not consider Best Management Practices (BMPs), available to eliminate concerns regarding leachate. For example, Lakeside would be willing to cover its RAP stockpiles within the Nisqually Subarea to mitigate for concerns of initial flushing.</p> <p>RAP is critical to sustainable use of natural resources, does not harm fisheries, water quality, other habitat or humans. Asphalt, including RAP, is used to line fish hatchery ponds and drinking water reservoirs.</p> <p>Use of RAP is a standard practice in Washington and is consistent with the vision in the Comprehensive Plan. It preserves the human environment by encouraging jobs in the community and preserves the natural environment by encouraging protection of mineral resource lands, limiting the carbon footprint of asphalt paving, and prevents unnecessary waste in landfills.</p> <p>Prohibition of RAP in the NSAP is due to water quality concerns. One month after its adoption, Thurston County Public Health Department to the position that asphalt recycling poses minimal environmental health concerns.</p> <p>Herrera Review found limited or no cause for concern. The three key conclusions are 1) RAP is highly variable, 2) contaminants leached in laboratory tests sometimes exceed state groundwater quality standards, and 3) The initial flush can result in concentrations exceeding groundwater quality standards, but these concentrations decrease</p>	Confirmed Receipt of comment.
---	---	--	-------------------------------

Thurston County 2018-2019 Comprehensive Plan Docket Item #11
Nisqually Subarea Plan - Recycled Asphalt Policy E.5
HERRERA ENV. CONSULTANT LITERATURE REVIEW
June 20, 2019

The summary provided is intended to capture the main points of a public comment and is not intended to be a verbatim representation of the comment. Please see the referenced comment for the full public comment. If a comment is not listed, but was submitted as part of the record, please contact Thurston County staff as soon as possible.

Comment Number	Name	Comment Summary	Staff Response
	Kyler Danielson, Lakeside Industries (cont'd)	<p>quickly. Based on these conclusions, RAP is not an environmental concern. While RAP may leach some contaminants at first flush, they quickly decrease below detection limits creating a negligible overall impact.</p> <p>Other points were raised regarding Herrera Literature Review:</p> <ul style="list-style-type: none"> - The review does not accurately reflect local conditions or local RAP impacts. - The review presents information in a manner that exaggerates study results. - The review summarized conclusions that are quite dissimilar from the conclusions in the underlying studies. - The review has a limited scope and does not consider Best Management Practices that would prevent leachate and/or transport of materials. BMPs, such as storm water controls, or installation of a cover could prevent leachate altogether or could prevent transport of materials to ground or surface water. The final decision to permit recycling should be based on all relevant information, including the availability of BMPs. - Asphalt stockpiling is allowed throughout Thurston County, except for the Nisqually Subarea. Facilities within the Nisqually Subarea are allowed to stockpile as long as the facility is not located in the "mined-out portion of a gravel pit" <p>We conclude that RAP leachate is not an environmental concern. Notwithstanding these findings, BMPs can even further ensure that RAP creates zero impact on water quality.</p>	

Thurston County 2018-2019 Comprehensive Plan Docket Item #11
Nisqually Subarea Plan - Recycled Asphalt Policy E.5
HERRERA ENV. CONSULTANT LITERATURE REVIEW
June 20, 2019

The summary provided is intended to capture the main points of a public comment and is not intended to be a verbatim representation of the comment. Please see the referenced comment for the full public comment. If a comment is not listed, but was submitted as part of the record, please contact Thurston County staff as soon as possible.

5	Howard Marks, David Gent WAPA/NAPA	<p>We strongly question the credibility and validity of the literature review and recommend it be removed from the public record.</p> <p>In 2017, about 1.2 million tons of RAP was used in new pavement mixtures in Washington state alone. A recent study by UW identified 63 existing RAP stockpiles of significant volume containing approximately 1.4 million tons of RAP distributed across the state. Nationwide, 99% of RAP collected is put back to use in pavement, saving more than 48 million cubic yards of landfill space annually. The report mischaracterizes study results and is of questionable relevance to the issue. Issues of the report include:</p> <ul style="list-style-type: none"> - The review contains numerous inconsistencies - The review mischaracterizes findings and conclusions from analyzed studies - Credibility and validity of the revised draft questioned <p>In summary, we emphasize the following:</p> <ol style="list-style-type: none"> 1) In decades of environmental and transportation agency studies, and in decades of independent academic research, including those mischaracterized in the Revised Draft, there appears limited if any concern associated with stormwater runoff or leachate from RAP stockpiles. 2) Across the U.S., we know of no other agency, county, or municipality that restricts the stockpiling of RAP. All recognize the material as environmentally safe. 3) Summaries of the identified studies (in the Literature Review) significantly mischaracterize the original research results to such an extent that it raises real concerns about the validity and credibility of the findings. 	Confirmed Receipt of comment.
---	--	--	-------------------------------

Thurston County 2018-2019 Comprehensive Plan Docket Item #11
Nisqually Subarea Plan - Recycled Asphalt Policy E.5
HERRERA ENV. CONSULTANT LITERATURE REVIEW
June 20, 2019

The summary provided is intended to capture the main points of a public comment and is not intended to be a verbatim representation of the comment. Please see the referenced comment for the full public comment. If a comment is not listed, but was submitted as part of the record, please contact Thurston County staff as soon as possible.

Comment Number	Name	Comment Summary	Staff Response
6	Pamela Keeley	No asphalt recycling plant without consultation with Nisqually Tribe. Honor the treaties. No more pollution!	Comment noted. Confirmed Receipt.
7	Benita K. Moore	Asphalt recycling plant off reservation road in Nisqually – Ground water contamination will happen. There has been no meaningful consultation with the Nisqually Tribe and no environmental impact study.	Comment noted. Confirmed Receipt.
8	Beverly Finlay	Please respect Native Americans. Conduct surveys, do research. Clean water is the most precious resource on this planet.	Comment noted. Confirmed Receipt.
9	Karen White	Asphalt plants do not belong near the water. Asphalt is harmful to fish, contains PHA and bitumen which reduces their fat stores, causes their muscles to stiffen and causes kidney damage, reducing their first year of survival at sea.	Comment noted. Confirmed receipt.
10	Phyllis Farrell	I am opposed to the proposal by Lakeside Industries to remove policy language that prohibits asphalt reprocessing (recycling) within the Subarea. It is prohibited due to water quality concerns. That has not changed. Piles of asphalt are known to leach toxic chemicals affecting groundwater. It is preposterous to consider this proposal given the proximity to the Nisqually River. Environmental effects of increased truck traffic should be considered as well.	Comment noted. Confirmed receipt.

Thurston County 2018-2019 Comprehensive Plan Docket Item #11
Nisqually Subarea Plan - Recycled Asphalt Policy E.5
HERRERA ENV. CONSULTANT LITERATURE REVIEW
June 20, 2019

The summary provided is intended to capture the main points of a public comment and is not intended to be a verbatim representation of the comment. Please see the referenced comment for the full public comment. If a comment is not listed, but was submitted as part of the record, please contact Thurston County staff as soon as possible.

Comment Number	Name	Comment Summary	Staff Response
11	David Hillman	<p>The literature review indicates that chemicals and metals are leached into surface and groundwater from stockpiles. The review also concludes “as a source of contaminants, RAP is highly variable...”</p> <p>What I take from this review is that pollutants can vary widely and significantly in type and concentration. It is impossible to know exactly what types of chemicals and metals are present in any particular RAP stockpile. This RAP review solidly supports the original language in policy E.5. I am strongly against changing the language in section E.5 of the Nisqually Subarea Plan to allow asphalt recycling.</p>	Comment noted. Confirmed receipt.
12	Julie Hillman	<p>RAP can widely vary in the type of pollutants and concentration. It would be impossible to know.</p> <p>This RAP review solidly supports the original language in policy E.5. I am strongly against changing the language in section E.5 of the Nisqually Subarea Plan to allow asphalt recycling.</p>	Comment noted. Confirmed receipt.
13	Daniel Hull	<p>I am not in favor of changing the language in section E.5 of the Nisqually Subarea Plan to allow asphalt recycling. I have read the literature review which clearly states that this can and does have an effect on the environment. The Nisqually watershed is one of the finest in the state, this is not an activity we should change language to allow. Please add me to mailing list. I am alarmed that many of the residents in my area had no idea about this.</p>	Comment noted. Confirmed receipt. Added to mailing list.

Thurston County 2018-2019 Comprehensive Plan Docket Item #11
Nisqually Subarea Plan - Recycled Asphalt Policy E.5
HERRERA ENV. CONSULTANT LITERATURE REVIEW
June 20, 2019

The summary provided is intended to capture the main points of a public comment and is not intended to be a verbatim representation of the comment. Please see the referenced comment for the full public comment. If a comment is not listed, but was submitted as part of the record, please contact Thurston County staff as soon as possible.

Comment Number	Name	Comment Summary	Staff Response
14	Ryan Ransavage, Miles Sand & Gravel	<p>Asphalt is a key building material in supporting physical and economic growth of the state. Department of Ecology regulates runoff from operations that recycle pavement. The limits of the discharge have been determined through years of study and research.</p> <p>Thurston County should consider the requirements DOE has determined. These limits have been set to ensure minimal degradation to waters of the state and the overall environment.</p> <p>Miles Sand & Gravel supports RAP operations be allowed within all areas of Thurston County when meeting current regulatory standards from solid waste rules and Sand and Gravel permit conditions.</p>	Comment noted. Confirmed receipt. Added to mailing list.
15	Numerous	<p>42 signatures on petition.</p> <p>We the undersigned submit this document as a public comment on the literature review. RAP poses concerns over possible leaching. Leachate can exceed state groundwater quality standards.</p> <p>We urge the Thurston County Commissioners to 1) Hire consultants to do additional study and 2) NOT to rezone this area to permit RAP.</p>	Comment recorded for the record.
COMMENTS RECEIVED AFTER JUNE 14, 2019			
16	Faith Morgan	No to asphalt plant.	Comment noted. Confirmed receipt.

Thurston County 2018-2019 Comprehensive Plan Docket Item #11
Nisqually Subarea Plan - Recycled Asphalt Policy E.5
HERRERA ENV. CONSULTANT LITERATURE REVIEW
June 20, 2019

The summary provided is intended to capture the main points of a public comment and is not intended to be a verbatim representation of the comment. Please see the referenced comment for the full public comment. If a comment is not listed, but was submitted as part of the record, please contact Thurston County staff as soon as possible.

Comment Number	Name	Comment Summary	Staff Response
17	Esther Grace Kronenberg	<p>I oppose the processing of recycled asphalt at the Holroyd site for the following reasons:</p> <ol style="list-style-type: none"> 1) The lower Nisqually Valley is classified by Thurston County as a wellhead protection area. It is protected as a rural environment. 2) The water sources for residents are wells. Lacey City well is less than half a mile from Lakeside's asphalt plant. 3) Lakeside knew RAP was not allowed before they built their plant at Holroyd's pit. Two court decisions reaffirmed they could not use RAP in the Nisqually Valley. Olympia Region Clean Air Agency (ORCAA) reaffirmed they could not, due to Subarea plan rules. 4) If Lakeside is allowed to process recycled asphalt, best practices should be enforced. 	Comment noted. Confirmed receipt.
18	Sandra Herndon	<p>Please accept this comment from the League of Women Voters.</p> <p>I am writing to express concern about the proposed recycled asphalt plant in the Nisqually. The League believes that concerning water resources is the overriding consideration. The consultants report is laboratory based. They state that laboratory tests are not necessarily representative of field conditions.</p> <p>We ask that planning not move forward with this plan.</p>	Comment noted. Confirmed receipt.
19	Kathy Lawhon	Please do not allow water plant here. We are running out of water.	Comment noted.

Maya Teeple

From: Howard Glastetter <howard.glastetter@comcast.net>
Sent: Friday, May 24, 2019 3:31 PM
To: Shannon Shula
Subject: Comments on the Herrera Review.
Attachments: Proposed Docket Ammendment 1703.doc

Follow Up Flag: Follow up
Flag Status: Flagged

Shannon,

I will study the review and get my comments to you when I finish. In the meantime, I'd like to submit a final variation of one of my comments that I've made over the past several years on this Nisqually Valley issue. The comments (attached) relate to the Herrera report and are already on record over the years at Thurston County in similar forms. The main point I'd like to emphasize now (as I have in the past) is that best practice for using RAP in asphalt production is to keep it dry under an un-walled building or a cover that allows air in, but keeps moisture out. Lakeside does this now at their Aberdeen, Washington plant. It allows asphalt pavement to be created at a lower temperature (due to not having to evaporate water in the RAP pile). This saves production cost and reduces both air and water pollution. It is a win for all parties.

-Howard

Howard H Glastetter
Howard.glastetter@comcast.net
 (360)491-6645

Everything should be as simple as it can be, but no simpler.
 Albert Einstein

Emailed to Thurston County March 5, 2017

This email is a public response to Lakeside Industries' latest docket attempt to remove Goal E-5 from the 1992 Nisqually Sub-Area plan. They want to reprocess Recycled Asphalt Pavement (**RAP**) at their Holroyd's Gravel Pit site in lower Nisqually Valley.

The overall goal of the November 1992 Nisqually Sub-Area Plan was to **"Maintain the existing rural environment of the Nisqually planning area with the primary emphasis on preserving ... its rural, aesthetic character for future generations."** (Page 17). This overall goal has been in the forefront of the 1992 Plan as well as ongoing public and private efforts to restore and maintain the Nisqually River Valley. The no-RAP provision of Policy E.5, along with the other E goals (Page 20-21, attached) was designed to protect the rural character from industrial dominance.

The county has an obligation to defend this well thought out plan and strengthen it when it comes up for renewal. However, business impacts have increased, rather than be phased out as the plan has required. Examples:

- 1) A mined out pit at Yelm Highway and Reservation Road, in the Nisqually Sub-Area, has been converted to a construction waste site (The Sub-Area Plan (Goal E.1.) and DNR require mined out pits to be reclaimed). Stumps and construction material, including RAP, are hauled in from as far as Mason County. This operation is located in the Nisqually Sub-Area, contiguous to the McAllister Springs Sensitive Area - above Lacey and Olympia municipal wells. People in county government are aware of this violation.
- 2) After the flood of 1996, neighbors could only replace lost homes by putting them on high foundations. No lot filling was allowed. However, the gun factory, in the middle of the neighborhood, was given permission to put 20,000 cubic yards of fill on their 1996 flood inundated property. They have yet to use this filled area. That filled part of the property is now for sale.
- 3) Lakeside got into the valley on a technicality and now wants to add the RAP storage and recycling to their process. This would have an increased truck traffic impact on the valley and opens the door to possible water and air pollution.

There are ongoing concerns with flooding. In 1996, much of the lower Nisqually Valley was under floodwaters, including portions of the Holroyd gravel mine. Due to past rail line, bridge and highway construction the Nisqually River has been artificially forced to the higher **east** side of the valley. When the river has major floods, it naturally flows to the **west**, above the rail line, through the Durgin Road Tunnel upstream, from the Holroyd Gravel Mine. If floodwaters enter the pit, aquifer groundwater could be infiltrated by pollutants from RAP storage in the pit, if RAP were ever allowed. (Flooding in Nisqually Valley will continue to be an issue as long as Tacoma Power is allowed to top off the Alder Lake Reservoir in the fall/winter seasons.) **Goal E.5 states: "... the reprocessing of asphalt shall not be allowed due to water quality concerns".** Note: RAP is recycled pavement. When it is ground up the surface area dramatically

increases and allows greater leaching of chemicals in the RAP. Please see next paragraph. Yellow highlighting is mine.

<http://www.rmrc.unh.edu/tools/uguidelines/rap131.asp> “For unbound applications, leachability from the RAP may also be a concern. This same leachability would be a concern if RAP was stockpiled or stored and exposed to precipitation.” What this URL is saying is that using RAP as one would use raw gravel for a road or driveway would cause more (possibly unacceptable) leaching into the soil than, say, a solid road made of bound asphalt. The reason being, that increased surfaces of the unbound RAP particles would have far more surface area to leach from than a hard surface road (much the same as a RAP stockpile exposed to the weather).

If RAP is allowed, and I’m not recommending it, there is a way to mitigate its effects. Below is the “Best Practice” to reduce moisture in RAP. It allows RAP to be processed at a lower temperature, reducing the cost of producing asphalt. There are two additional side benefits to this. Less heat means less energy, reducing air pollution. Keeping RAP dry also prevents chemical leaching into the ground water. This is a win for the asphalt company (less cost) and the neighborhood (less water/air pollution).

The **un-walled building** cover technique was also recommended in two different articles in the handout we used when I was on the Thurston County Asphalt Advisory Task Force (AATF) in 2007-8. A Lakeside employee told me they had no intention of doing this.

Note of caution: This still would not solve the problem of having a large **source** RAP pile in the pit. Suppose Lakeside were allowed to have RAP at their site. If Lakeside were to maintain a source RAP pile of the size they had when they were at the Hogum Bay Olympia Landfill a few years ago, it likely would create a water pollution problem. They had an irregular pile 60+ feet in height and around 150 feet across at the base. That may have been marginally ecologically acceptable, because the water table could be around 100 feet below ground level at the Hogum Bay site. The current permeable gravel floor at Holroyd’s is about 15 to 20 feet above an aquifer water table, even less in wintertime. Holroyd’s pit is also in the Nisqually 100-year floodplain. I have photos that show they were flooded in 1996.

<http://www.morerap.us/files/rap-best-practices.pdf>

Stockpiling to Minimize Moisture

Moisture content of aggregates and RAP is a primary factor affecting an asphalt plant’s production rate and drying costs. Some contractors have implemented creative approaches to reducing moisture content in stockpiles. The best practice to minimize the accumulation of moisture in stockpiles is to cover the stockpile with a shelter or building to prevent precipitation from getting to the RAP. Second to that, it is a good practice to use conical stockpiles to naturally shed rain or snow, and to place the stockpile on a paved and sloped surface to help water drain from the pile. Irregular-shaped stockpiles with surface depressions that will pond water should be corrected by shaping the pile as it is being built with the front-end loader or a small dozer. However, the use of heavy

equipment on the top of RAP stockpiles should be minimized to avoid compaction of the RAP. Likewise, it is also recommended that RAP stockpiles be limited to 20 feet in height to reduce the potential for self-consolidation of the stockpile.



Final thoughts:

Lakeside RAP storage at the Hogum Bay site did not meet “**Best**” or even “**Second Best**” practices. Would they do better in Holroyd’s pit? The jury is out on that. The aquifer below the pit is the source of drinking water for some as well as farm / garden irrigation for many in the valley.

Lakeside knew RAP was not allowed before they built their new plant at Holroyd’s pit. The County Commissioners and two court decisions ruled they could not use RAP in Nisqually Valley. ORCAA reaffirmed they could not, due to Sub-Area Plan rules. They chose to push their way into this rural residential area, anyway. Since then, they’ve been posturing that they have been treated unfairly.

Holroyd’s pit is close to being mined out. DNR and the Sub-Area Plan say they have to move out when that happens. Will they? Or, will they want increase truck traffic and change infrastructure to haul in **gravel** from another pit **as well as RAP**? This would also be in violation of the Sub-Area Plan. **(Goal E.5 says: ”The reprocessing of imported mineral resources shall not be the primary accessory use”** Gravel is a mineral and is supposed to come from inside the pit.

Thank you for your consideration.

Sincerely,

Howard Glastetter
howard.glastetter@comcast.net
 (360)491-6645

From: [EJ Zita](#)
To: [Maya Teeple](#)
Cc: [Shannon Shula](#)
Subject: Recycled Asphalt Plant info
Date: Sunday, May 26, 2019 1:40:57 PM

Hi, Shannon and Maya, please do put me on the mailing list for this. Thank you for your work, and for letting us know.

I understand that public comment is due 14 June, and the hearing is 20 June.

Best, Zita

E.J. Zita, Commissioner, Port of Olympia, District 3

ejz@portolympia.com * 360-481-9315 * www.portolympia.com

We're working for sustainable economics, community benefit, and environmental stewardship at the Port of Olympia.

My personal response may not represent all Port perspectives.

If you do not receive a response within a week, please try again. Thank you - Zita

-----Thurston County Community Planning <wwm-webmaster@co.thurston.wa.us> wrote: -----

To: ejz@portolympia.com

From: Thurston County Community Planning <wwm-webmaster@co.thurston.wa.us>

Date: 05/22/2019 10:30AM

Subject: Consultant Literature Review on Recycled Asphalt Now Available Online. Public Info Meeting on the Report on June 20, 2019.

From Thurston County Government

COMMUNITY PLANNING

(Formerly Long Range Planning)

Webmail sent May 22, 2019

Hello from Community Planning

Consultant Literature Review on Recycled Asphalt Now Available Online.

The public is invited to submit written comment on the report, and attend an informational public meeting on June 20, 2019.

Citizens can now review and provide comments on the [literature review](#) conducted by Herrera Environmental Consultants. This literature review was conducted as part of a proposed policy change. The proposal would amend a single policy within the Nisqually Subarea Plan to remove language that currently prohibits asphalt recycling within the subarea.

A public meeting will be held by Community Planning to provide information on the literature review. Herrera Environmental Consultants will give a presentation on the report at this meeting beginning at 6:30 PM.

What: Public Information Meeting on the Consultant Literature Review as part of the Proposed Amendment to the Nisqually Subarea Plan Recycled Asphalt Policy (Policy E.5)

When: Thursday, June 20, 2019

Time: 6:00 p.m. - 7:30 p.m.

A presentation will begin at 6:30 p.m.

Where: Lacey Community Center, Meeting Rooms 1 & 2 at 6729 Pacific Ave. SE in Olympia, 98502

Persons with disabilities requiring reasonable accommodations to participate in the meeting should call the staff contact listed below to request ADA accommodation at least five days prior to the public meeting. Persons with speech or hearing disabilities may call via Washington Relay: 711 or 800-833-6388.

HOW TO SUBMIT WRITTEN COMMENTS & PROVIDE INPUT

The public may submit mailed or emailed comments on Herrera Environmental Consultant's literature review report. Comments can be emailed to Shannon Shula, Associate Planner, at Shannon.Shula@co.thurston.wa.us, hand delivered, or mailed to:

Thurston County Community Planning and Economic Development
Attn: Shannon Shula, Associate Planner
2000 Lakeridge Dr. SW
Olympia WA, 98502

Comments must be received no later than 5:00 p.m. on Friday, June 14, 2019.

LEARN MORE ONLINE

View additional information regarding the meeting, the County's review process, and opportunities for public involvement online at the [2017/2018 Official Comprehensive Plan Amendment Docket - Item 11 \(Recycled Asphalt Policy Consideration\) webpage](#).

HOW TO GET MORE INFORMATION OR TALK TO SOMEONE

If you have questions, please contact Shannon Shula by email at Shannon.Shula@co.thurston.wa.us or call 360-786-5474.

Sincerely,

Thurston County Community Planning Staff

[SUBSCRIBE TO OUR EMAIL LIST](#)

[VISIT OUR WEBSITE](#)

Thurston County Planning Department,
2000 Lakeridge Drive S.W., Olympia, WA 98502

[SafeUnsubscribe™ ejz@portolympia.com](#)

[Forward this email](#) | [Update Profile](#) | [About our service provider](#)

Sent by www-webmaster@co.thurston.wa.us in collaboration with

Constant Contact



Try email marketing for free today!

Comments on Herrera's Contaminant Leaching from RAP document

By Howard Glastetter
 11110 Kuhlman Road SE
 Olympia, WA 98513
Howard.glastetter@comcast.net
 Cell: (360)556-1574

May 28, 2019

The Herrera document was based on available, easily accessed, online studies; most of which have been around for several years. The report was even-handed and concluded that recycled asphalt pavement (RAP) leaches chemicals and is an issue of concern, albeit somewhat minor in this area.

I'd like to preface my comments on the document with an observation of the Lakeside operation at Holroyd Gravel Mine. Their operation is state of the art. It is very rare to smell any odor of hot asphalt from the pit. Nisqually neighbors get a whiff of it when covered trucks drive by, but that's it. Lakeside employees have been respectful ladies and gentlemen. So, Lakeside is a good neighbor.

A couple comments in Herrera's document caught my eye. I knew that New Jersey had very stringent rules about RAP. On page 10 of the document, under **Toxicity Testing** in New Jersey, it states: RAP "... could be used as an unbound material in all environments except those which are highly acidic PH < = 4), such as mines ... (Note: the assumption is that the authors are referring to coal- and metal-type mines and not gravel-type ...)" I did a little research, see below.

https://www.sourcewatch.org/index.php/New_Jersey_and_coal#Major_coal_mines

Major coal mines

There are no coal mines in New Jersey.^[18]

<https://www.state.nj.us/dep/njgs/pricelst/gsrreport/gsr25.pdf>

The introduction to the PDF says: Sand and gravel production in New Jersey is a \$100 million annual business with 786 mining operations, around 100 of which are active.

Metal mining in New Jersey appears to be a thing of the past and was done via tunneling and not open pit. So, a better Herrera assumption would be that the "authors are referring to **permeable soiled gravel mines**". I'm familiar with wells at 3 different homes in Nisqually Valley below Holroyd's mine. They all contain a certain amount of red / brown turbidity, which I believe is caused, to a certain extent, by gravel mining in the pit. See below.

<https://www.reference.com/home-garden/causes-well-water-suddenly-turn-brown-f7f4fce6acfc870>

"The most common cause of brown well water is iron contamination. A sudden change in water-color means that the contaminant is newly introduced to the well, and it may be caused by **industrial contamination**, rusty plumbing fixtures or natural iron leaching from the ground". Nisqually valley soil contains iron.

Back to the Herrera document: A point was made (page 17 - ***Comparison Studies to Expected conditions in Nisqually***) that “European RAP tests may not relate to U.S. tests, because asphalt pavement was made there with tar as an additive until 1975 and emits more polycyclic aromatic hydrocarbons than RAP produced from bitumen which is what has been used in the U.S. since WW 2.”

Page 19 item 1 made me pause. It stated that tests showed: “Cu and Zn (copper and zinc) also exceeded U.S. EPA WQLs”. This reminded me that there is a more modern ingredient that is popular in U.S. asphalt production: recycled asphalt roofing shingles. Some of the more expensive shingles come impregnated with copper flakes to prevent moss buildup. Many home owners put zinc on asphalt roofs, either as metal strips, liquid applications, or solid zinc flake applications to do the same thing. Does reprocessing these used shingles add these metals to asphalt roads that will eventually be ground up, returned and stored to open weather at an asphalt plant site? I’m not seriously suggesting this as the source of Cu and Zn metals found in the above test. I mention it because, most of us are initially pleased to hear about recycling. However, as Einstein said: “Everything should be as simple as it can be, but no simpler”. The reprocess should be safe. Keep RAP dry when storing it over a permeable floored gravel mine.

The Herrera study painted Nisqually Valley with a broad brush. I’d like to add a few details. The lower valley is classified by Thurston County as a Wellhead Protection Area. It is also protected, as a rural environment, by a Thurston County Sub-Area Plan.

The water sources for all residents in the lower valley are from wells. Many residents, but not all, get drinking water from a Lacey City well next to the Nisqually River - less than a half mile from Lakeside’s Asphalt Plant. The plant sits in the permeable soil of Holroyd’s Gravel Mine at the very beginning of the Nisqually Delta in lower Nisqually Valley. The pit was once the end of a glacier. There is a capped-artesian-springs well just across Old Pacific Highway from the pit. These springs obviously run under the pit and likely continue through rural residential land to Puget Sound. (There was, until recently, a capped artesian spring pipe near the board walk in the tide lands at the Nisqually Delta sanctuary.) This mine / industrial activity is up-river from many homes that have private wells because Lacey Water doesn’t serve them. Holroyd’s Pit, itself, has a several-year-old active request at the county to mine the pit from its current permeable floor level to 80 feet below the water table. Delivering RAP to the pit would also mean increased truck traffic on the two-lane roads in the valley. So, this site is a very sensitive part of the valley and could become a stressed one.

If RAP were ever allowed, it should be under cover and out of the weather before and during its use. Please see a past comment on RAP that I resubmitted May 24, 2019. It shows weather protection is an industrial “Best Practice”.

Sincerely,

Howard Glastetter



P.O. Box 7016 / Issaquah, WA 98027
ph: 425.313.2600 / lakesideindustries.com

June 12, 2019

Via email

Thurston County Community Planning & Economic Development
Attn: Shannon Shula, Associate Planner
2000 Lakeridge Drive SW
Olympia, WA 98502

**Re: Lakeside Industries' Comments on Herrera Review Literature Review -
Leaching from Recycled Asphalt Pavement**

Dear Shannon:

Thank you for this opportunity to comment on the Literature Review on Contaminant Leaching from Recycled Asphalt Pavement ("RAP") prepared by Herrera Environmental Consultants, Inc. and dated May 14, 2019 ("Herrera Review").

RAP materials "have been successfully reused and recycled into new asphalt pavements since the 1970s."¹ The Herrera Review analyzes the potential for leachate from RAP and generally concludes that the impact to the environment from RAP stockpiles is limited or negligible. Unfortunately, the Herrera Review includes several inaccurate statements and excludes important information, which may create unnecessary concern. We address those issues below.

Additionally, the Herrera Review did not consider or address the various best management practices ("BMPs") available to eliminate any possible concerns regarding RAP leachate. For example, Lakeside would be willing to cover its RAP stockpiles within the Nisqually Sub-Area to mitigate any possible concerns with the "initial flushing" identified in the Herrera Review.

Background

There is a good reason why no city or county in the United States, other than the Nisqually Subarea in Thurston County, prohibits the use of RAP in new asphalt production. RAP is safe for use in producing new asphalt and it is the most recycled product in the Country. RAP is critical to sustainable use of our natural resources. RAP does not harm fisheries, water quality, other habitat or humans. Asphalt, including asphalt with RAP, is used to line fish hatchery ponds and drinking water reservoirs.

Asphalt has been called the "ultimate recyclable product" and the use of RAP is a standard practice in Washington and throughout the world. Reprocessing asphalt is consistent with the

¹ Mehta et al. (2017), pg. 1.

vision in Thurston County's Comprehensive Plan. It preserves the human environment by encouraging jobs in the community. It preserves the natural environment by encouraging protection of mineral resource lands, limiting the carbon footprint of asphalt paving, and preventing unnecessary waste in landfills. It promotes economic health by reducing the cost of asphalt manufacturing, which supports local asphalt paving businesses and property owners.

Thurston County adopted the Nisqually Sub-Area Plan in November 1992. As adopted, the Nisqually Sub-Area Plan prohibits the use of RAP in the mined-out portion of a gravel pit based on "water quality concerns." One month after its adoption, the Thurston County Public Health Department took the position that "a waste asphalt recycling operation presents none to very minimal environmental health concerns." See *Attachment 1*. Despite the Thurston County Public Health Department's finding, the Nisqually Sub-Area Plan still prohibits the use of RAP in the Nisqually Sub-Area. Lakeside Industries requested an amendment to the Nisqually Sub-Area Plan to remove this prohibition. To further advance the County's understanding of water quality impacts from RAP, the County contracted with Herrera to analyze available leaching research.

The Herrera Review found limited or no cause for concern

The Herrera Review's ultimate conclusions find limited or no cause for concern caused by leaching of RAP. The purpose of the Herrera Review was to "review available research on direct measurements of leachate from RAP."² After an initial assessment of over 100 articles, the Herrera Review analyzed eight "highly rated" studies by Aydilek et al., Legret et al., Mehta et al., Birgisdóttir³ et al., Norin and Strömvall, Kang, et al., Morse et al., and Brantley and Townsend.⁴ Consistent with its purpose, the Herrera Review came to three key conclusions:

- RAP is highly variable;
- Some contaminants leached from RAP in laboratory tests at concentrations exceeding state groundwater quality standards; and
- The initial flush of contaminants from RAP "can result in concentrations exceeding Washington state groundwater quality standards, but these peak concentrations decrease quickly to below detection limits as more water is flushed through the RAP."

The Herrera Review also noted in its conclusions: "a number of the researchers suggested that the impact to the environment would be negligible if dilution and assimilation were considered."⁵

Based on the Herrera Review's conclusions, leachate from RAP is not an environmental concern. While RAP may leach some contaminants at first flush, levels decrease to below detection limits quickly, creating a negligible overall impact. Despite these clear conclusions, the Herrera Review contains inaccurate statements and excludes contextual information.

² Herrera Review, Executive Summary.

³ The Herrera Review repeatedly misspells this author as either "Birgisdottir" or "Birgisdotter." (See e.g. Herrera Review, pg. 19).

⁴ On page 19 of the Herrera Review, Brantley and Townsend is misspelled as "Brently and Townsend."

⁵ Herrera Review, pg. 18.

The Herrera Review does not accurately reflect local conditions or local RAP impacts.

The Herrera Review makes inaccurate statements or excludes crucial information regarding local conditions relevant to the impact of RAP in the Nisqually Sub-Area. First, three of the studies analyzed in the Herrera Review were conducted in Europe, where road usage is quite dissimilar from the U.S. Popular vehicle manufacturers and models in Europe are not as common in the U.S. Diesel fuel is more prevalent in Europe. European road products are also different. For example, in Scandinavia, where the Birgisdóttir and Norin and Strömvall studies were performed, studded tire road wear and winter de-icing solutions are more prevalent than in the Nisqually Sub-Area. These differences likely influenced data in the studies.

Additionally, the Herrera Review incorrectly asserts that rainwater in the Puget Sound region is quite acidic; however, more recent analysis determined that local rainwater is not as acidic as Herrera's Review declared. The Norin and Strömvall study used water with a pH of 4.0 or 4.5 for its batch tests. The Herrera Review relied on a 1977 document to assert that "the acidic test conditions used in the [Norin and Strömvall] batch tests are not too low to represent expected conditions in Nisqually." Fortunately, the Pacific Northwest does not currently experience such acidic rainfall. For the last thirty years, pH in the Puget Sound region has ranged between approximately 5.0-5.3.⁶ The pH scale is logarithmic. Thus, a pH of 4.0 is **ten times** more acidic than a pH of 5.0. For this reason, acidic test conditions used in the Norin and Strömvall study were, in fact, too low to represent expected local conditions.

The Herrera Review presents information in a manner that exaggerates study results.

The Herrera Review presents information in an ineffective manner. For example:

- Tables included in the Herrera Review depict data in ranges. This does not consider that the highest number in the range can be (and often is) an outlier, which consequently highlights the rare exceedances.
- In some instances, a range should be provided in a table but is not. For example, the Legret et al. (2005) study found 0.055 µg/L of dibenzo(a,h)anthracene in column tests on Day 2 of the study; however, that concentration decreased to below detection levels for every additional test. Table 2 shows the exceedance without noting the numerous samples with no dibenzo(a,h)anthracene detected.
- A couple studies used RAP from highly contaminated property, such as a gas station⁷ and a roadway containing lead paint.⁸ Such samples were not representative of RAP that would be accepted for recycle in Thurston County. The Thurston County Code does not allow recycling of asphalt from a gas station⁹ and lead is no longer used in paint.

⁶ See data from the National Atmospheric Deposition Program/National Trends Network.

⁷ The Birgisdóttir study used RAP from a gas station.

⁸ The Mehta study used RAP containing lead paint.

⁹ TCC 20.54.070 (3.1) ("The source of Recycled Asphalt Pavement (RAP) shall only be from highways, roadways, runways, parking lots and shall not be from a contaminated site such as a Superfund site or Model Toxic Control Act (MTCA) site.").

- The Herrera Review Table 1 includes batch test data the Norin and Strömvall column, but the Norin and Strömvall authors did not conduct batch tests – the data was taken from a separate study.¹⁰ Herrera’s decision to incorporate data from a separate study conflicts with its stated goal to use only primary data sources in its literature review.¹¹

The Herrera Review’s summarized conclusions are quite dissimilar from the conclusions in the underlying studies.

The Herrera Review provided two to three sentence summaries of the studies,¹² but those summaries inaccurately reflect the key conclusions of the report. Namely, the following are direct quotes from several of the study conclusions that are not reflected in the Herrera Report:

Aydilek: “[Water Leach Test (WLT)] and [Column Leach Test (CLT)] results could not be compared due to differences in liquid-to-solid ratios (20:1 for WLT versus 0.1:1 for CLT), test durations (18 hours for WLT versus two months for CLT), and test conditions (static for WLT versus dynamic for CLT). Nonetheless, both tests provided an insight into the leaching potential of RAP. **RAP did not release excessive amounts of toxic metals in either case.**”¹³

Legret: “The various extraction methods used during this study, as well as the batch and column experiments, have shown that pollutant leaching is rather weak for most of the studied parameters. Concentrations in the solutions derived from batch leaching tests generally remained below EC limit values for drinking water....In all instances however, assessments were restricted, with leachate concentrations generally falling below detection limits.”¹⁴

Mehta: “RAP may be used as an unbound material in all environments except those which are highly acidic ($\text{pH} \leq 4$) such as, but not limited to, mines with sulfur-containing minerals or landfills where other materials may decompose creating an acidic environment.”¹⁵

Birgisdóttir: “Concentrations of PAHs that are found above the Danish soil quality criteria near roads in Denmark paved with bitumen-based asphalt is very unlikely to be caused by leaching of PAHs from the asphalt.”¹⁶

Unfortunately, the Herrera Report does not adequately present these and other study conclusions.

¹⁰ Herrera Review, Table 1, footnote h. The Herrera Review explains in a footnote that the data attributed to Norin and Strömvall was taken from another study, stating that “[r]esults reported are from batch tests performed during previous research (Larsson 1998) that were performed on finely ground material.”

¹¹ Herrera Review, pg. 2 (“The remaining sources were sorted with the objective of including only those that serve as primary data sources; studies that did not contain data or that summarized data collected by others were excluded.”)

¹² See Herrera Review, pg. 19.

¹³ Aydilek et al. (2017), pg. 70 (emphasis added).

¹⁴ Legret et al. (2005), pg. 3684.

¹⁵ Mehta et al. (2017), pg. 4 and 84.

¹⁶ Birgisdóttir et al. (2007), pg. 1420.

The Herrera Review has a limited scope and does not consider Best Management Practices that would prevent leachate and/or transport of materials.

Best management practices could prevent leachate altogether or could prevent transport of materials to ground or surface water. However, the authors of the Herrera Review note, “[t]he study scope was specifically constrained to summarizing research on direct leaching of pollutants. For example, it does not account for use of best management practices (BMPs) such as covering the material to reduce the amount of precipitation that comes into contact with the RAP, thereby limiting leachate formation. It also does not address fate and transport as leached materials move over or through ground and water.”

While it is clear from the conclusions of the analyzed studies that there is limited or no cause for concern of leaching from RAP, numerous BMPs could address and prevent leaching and transport of materials, including storm water controls and/or installation of a cover (e.g. a tarp or shed) to prevent rainfall on RAP piles. The ultimate decision whether to permit the recycling of asphalt within the Nisqually Sub-Area should be based on all relevant information, including the availability of BMPs.

Asphalt stockpiling is currently allowed throughout Thurston County

Asphalt recycling is allowed throughout Thurston County, with the small exception of the Nisqually Sub-Area. In fact, facilities within the Nisqually Sub-Area are permitted to recycle and stockpile RAP as long as the facility is not located within the “mined-out portion of a gravel pit.” Several facilities in Thurston County have been recycling asphalt for years.

Conclusion

Relevant studies and data show that RAP leachate is not an environmental concern. Notwithstanding these findings, BMPs can even further ensure that RAP creates zero impact on water quality within the Nisqually Sub-Area.

Thank you again for your time and consideration on this important issue.

Sincerely,



Kyler Danielson
Land Use Project Manager
Lakeside Industries

Enclosure

cc: Maya Teeple, Associate Planner, Thurston County

Attachment 1

RECEIVED

DEC 15 1992

THURSTON CO. PLANNING DEPT.

COUNTY COMMISSIONERS

George L. Barner, Jr.

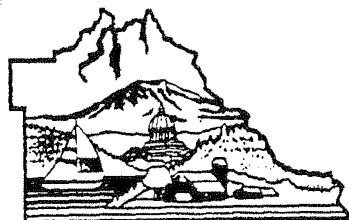
District One

Diane Oberquell

District Two

Linda Medcalf

District Three



THURSTON COUNTY

WASHINGTON

SINCE 1852

PUBLIC HEALTH AND
SOCIAL SERVICES DEPARTMENT

Patrick M. Libbey, Director

Diana T. Yu, MD, MSPH

Health Officer

December 15, 1992

Michael Kain
Thurston County Planning Department

Re: Policy statement - Asphalt/concrete recycling

Dear Mike,

This is a reply to your recent request for a position response from the health department with regard to site specific use for recycling of waste concrete and asphalt. After review and consultation with DOE and the initial examination of the Jone's Quarry S.U.P. for the on-site recycling of concrete and asphalt, our department has taken the approach that a waste asphalt recycling operation presents none to very minimal environmental health concerns.

Formerly, our department's greatest concern was the possibility of leaching PAH's from the asphalt materials to ground or surface waters. Present research and information suggests that this is not a serious problem as PAH's are basically insoluble in water and adsorb well to organic soils. If future information about asphalt indicates otherwise, then our department will reassess our current approach.

However, as a condition of issuance of a solid waste permit for such a facility, other parameters would need to be addressed:

- 1) the hydrogeological characteristics of the site would need to be assessed, ie., waste material would not be stored in a wetlands or flood plain area, nor should the material have direct contact with surface or groundwater or placed on excessive slopes.
- 2) all waste materials received at the site is to be quantified (by weight or volume) and the source of the material must be known. For instance, if the waste asphalt or concrete came from a known industrial site or petroleum spill, this material would not be suitable for recycling. The operator would be obligated to turn away the material or test the material prior to acceptance.
- 3) Surface water run-off at the site would need to be addressed.

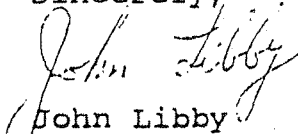


page 2

The recycling of waste materials is also in concert with stated county and Washington State goals to divert waste items from landfilling to a more beneficial use. Asphalt and concrete recycling definitely support these goals and the county should be supportive if site specific proposals can meet the appropriate solid waste permitting criteria.

I hope this will help in future determinations about this issue. If you have further inquiries, please contact me at 786-5461.

Sincerely,



John Libby
Solid Waste Program

cc: Gregg Grunenfelder
Jane Hedges



June 13, 2019

Thurston County Community Planning & Economic Development
 Attn: Shannon Shula, Associate Planner
 2000 Lakeridge Drive SW
 Olympia, WA 98502

Transmitted via email to:
Shannon.Shula@co.thurston.wa.us

NAPA/WAPA comments regarding Literature Review of RAP leachate

The industry appreciates the opportunity to review and comment on Herrera Environmental Consultant's Literature Review entitled "Contaminant Leaching from Recycled Asphalt Pavement" ("Literature Review" or "Report") as its findings could greatly impact asphalt pavement facility operations. Based on our reading of the Report, ***we strongly question the credibility and validity of the Literature Review and recommend it be removed from public record.*** Supporting evidence for this statement is available below

To our knowledge, the Nisqually Sub-Area's prohibition of storage and use of RAP, a valuable recycled material that has been stockpiled and used across the U.S. for at least four decades with no adverse environmental or health impacts, is a first. Because of the importance and implications associated with Thurston County's upcoming decision, and due to the serious mischaracterizations in the Literature Review, we find it necessary to provide our written response as part of the public comment process.

National Asphalt Pavement Association ("NAPA") is a 501(c)(6) trade association representing asphalt pavement material producers and paving contractors at the national level. Last year, the approximately 3,500 asphalt plants across the country produced more than 350 million tons of asphalt pavement mixture and employed some 250,000 individuals in the production and placement of asphalt-based pavements. The continued use of RAP in asphalt pavements is critical to ensure the nation's paved roadway surfaces are economically constructed and smooth, safe, and quiet for the travelling public.

Washington Asphalt Pavement Association ("WAPA") likewise represents asphalt pavement material producers/paving contractors at the state level and has served this function since its founding in 1954. WAPA member companies own and operate 60+ asphalt plants which produce 98% of the hot mix asphalt ("HMA") manufactured statewide. WAPA continuously partners with the Washington State Department of Transportation and the American Public Works Association of WA to develop and refine the use of RAP in HMA. RAP use has been a broadly accepted standard/technology in Washington for over 20 years and represents in excess of 20% of the annual HMA volume produced for both the public and private market.

Introduction

Across the country, as part of everyday maintenance, repair, and construction activity, old asphalt pavement material is removed from roads and parking lots and then reclaimed for future use. In 2017,

about 1.2 million tons of RAP was used in new pavement mixtures in Washington state alone. A recent study by the University of Washington identified 63 existing RAP stockpiles of significant volume containing approximately 1.4 million tons of RAP distributed across the state, all of which is destined to be incorporated into new pavements. Nationwide, more than 99% of RAP collected is put back to use in new asphalt pavements, saving more than 48 million cubic yards of landfill space annually and helping to reduce the cost of new pavement mixtures compared to all-virgin-material mixes.

Because use of RAP is now ubiquitous, many state transportation and environmental agencies have investigated the environmental implications of RAP stockpiles. These agency investigations, along with the majority of independent academic research studies, have not found reason for concern from the storage of, and stormwater runoff from, RAP stockpiles. As of year-end 2017, over 100 million tons of RAP was stockpiled in the U.S., and decades of monitoring runoff from RAP stockpiles has similarly found no reason for concern associated with stormwater runoff from RAP stockpiles. For example, Virginia Department of Transportation (“DOT”) conducted a literature review of RAP leachate, similar to Thurston County’s review, and concluded that although “concern has been expressed that lechate [sic] resulting from flood or rainfall could be contaminated by such recycled asphalt and thus have negative environmental consequences, ... [r]esults of numerous field studies and standardized tests, including the Toxicity Characteristic Leachate Procedure (TCLP) test, suggest that typical RAP can be used as ‘clean fill’ without undue negative environmental consequences.”¹

The Literature Review Report stands in stark contrast to these decades of proven findings. Unfortunately, the Report mischaracterizes study results and is of questionable relevance to the issue of the environmental implications of RAP stockpiles. The Report also fails to address the numerous issues with many of the studies initially raised in comments previously submitted to the County.

Holistic Assessment of RAP Stockpiling

Before we call to your attention a few of the report’s most serious misstatements and mischaracterizations, we think it important to holistically assess the potential for environmental harm from RAP stockpiles.

RAP is no different than typical asphalt pavement surfaces. The primary source of contaminants of concern come not from the asphalt material itself, but instead from emissions associated with continuous vehicular traffic. For this reason, the case can be made that runoff from RAP stockpiles is a less likely source for stormwater contaminant runoff than in situ hardscape (i.e. existing road surfaces) because, beyond an initial flushing, as documented in the Literature Review, no further contaminants would leach from a RAP stockpile. This is intuitive and incontrovertible.

Similar with other state DOTs, the Washington State DOT and the Federal Highway Administration have allowed RAP to be used in a number of different roadway and highway applications for decades, including as a crushed rock supplement and as common fill and side-slope fill (see WSDOT Standard Specification 9-03.21(1)E).

¹ See <http://vtrc.virginiadot.org/rsb/RSB4.pdf>

The Literature Review Contains Numerous Inconsistencies

As mentioned, there are a number of inconsistencies and misstatements in the Literature Review; however, instead of identifying misstatements that should have been revised, we will highlight several mischaracterizations that lead us to question the report's overall credibility and validity.

First, the issue of potential RAP leachate on water quality has already been addressed by many state and federal agencies since the 1990s and most recently in 2017. Although the Literature Review identifies two comprehensive state/federal agency studies (Mehta et al. (2017) and Aydilek et al. (2017)), The Report's summary of these comprehensive reports focuses on a few insignificant, individual factors in certain water quality standards from testing apparatuses purposefully designed to over-estimate potential leachate.

Second, Herrera Environmental Consultants do identify that some foreign studies (e.g., Norin and Stromvall, 2004) may be non-representative of typical U.S. asphalt pavement production practices, specifically because coal tar was historically used in some European countries. Herrera further states that because of "this and other sources of variability, only broad summaries can be drawn from the research." However, it remains unclear why the Literature Review relies heavily on the Norin and Stromvall (2004) study to illustrate excessive PAH leachate, even though it acknowledges coal tar contains thousands of times more PAHs than bitumen.

Last, the Literature Review Report relies on studies without analyzing or considering how differences in pH, RAP characteristics, testing conditions, and storage conditions influence the analysis. The studies cited all analyze differing material under differing circumstances that are not necessarily consistent with the conditions in Thurston County.

The Literature Review Mischaracterizes Findings and Conclusions from the Analyzed Studies

While the Literature Review Report attempts to characterize the impact of RAP leachate, it mischaracterizes the reviewed literature to such an extent that its findings should not be relied upon. Instead, Thurston County should rely on the numerous state and federal agency characterizations of RAP leachate potential in deciding whether to allow RAP stockpiling in the Nisqually Sub-Area.

Although we are concerned with the entirety of the Literature Review, our letter focuses on a few examples to demonstrate how the Report mischaracterizes studies.

Mehta et al. (2017)

The "Mehta et al." study from 2017 was an almost \$500,000, 100-page study, which included extensive toxicity testing conducted by both Columbia University and Rowan University, and sponsored by both the U.S. DOT and the New Jersey DOT. The study "abstract," which describes the purpose and findings of the study, states:

The primary goal of this study was to investigate the environmental impacts of reclaimed asphalt pavement (RAP) while it is freshly processed (i.e., fresh HMA) and after subjecting it to accelerated weathering. ... The results of these experiments showed that high molecular weight polycyclic aromatic hydrocarbons (PAHs) can elute from the weathered RAP materials, but none was above EPA guidelines. These released pollutants were largely attenuated in the soils. ... Based on the results, RAP may be used as an unbound material in all environments except those which are highly acidic (i.e., pH ≤ 4).

In direct contrast to the Mehta et al. study's stated findings, the Literature Review's summary of Mehta et al. (2017) states the following:

Lead was close to or higher than US EPA drinking water standards for a number of the weathered NORTHRAP samples in batch tests ... [and] ... benzo(a)anthracene [sic] was detected at levels of concern based on 1995 US EPA human health advisory levels. In the experiments conducted with a strong solvent, many of the PAHs exceeded US EPA 2016 Clean Water Act criteria.

Further, the Report concludes: "While some portion of the contaminants is generated from components of the asphalt itself, exposure to roadways (and traffic) was identified as a major contributor of contaminants that were available for leaching in three of the studies (Mehta et al. 2017, ...)."

Based on the above-quoted summaries, we do not find evidence from the original study to support the Literature Review's "summary." In fact, it would be likely that strong solvents will certainly dissolve asphalt pavement, releasing PAHs typically bound and unavailable in RAP. How this has relevance to the issue of PAH leachate from RAP is questionable.

Aydilek et al. (2017)

A similar comprehensive 250-page study sponsored by Maryland State Highway Administration (MSHA) and conducted by University of Maryland in 2017 (Aydilek et al. 2017) addressed a similar issue as Mehta et al. (2017), specifically the MSHA "expressed concern over the limited guidance on the use of RAP in highway shoulder applications and the lack of information on ... exposure of pavement to chemicals generated from the 'vehicle exhaust, gasoline, lubricating oils, and metals ...' frequently found in many RAP stockpiles..." Aydilek et al. summarizes their study's purpose and conclusions as:

A research study was undertaken to investigate the environmental impacts associated with RAP on highway base and shoulders in Maryland. A battery of laboratory pH-dependent leaching tests and toxicity characteristics leaching procedure (TCLP) tests were conducted to determine the environmental suitability of RAP. ... The following conclusions can be made: ... The concentrations of all metals, except As, in the pH-dependent leaching tests were below the U.S EPA WQL within the drinking water pH (pH 6.5–9). Based on literature, As is most probably present in its oxidizing form [As(V)] in the leachates of Maryland RAPs and does not present any concern ... The TCLP concentrations of all metals were below the U.S EPA WQL. The TCLP concentrations of most polycyclic aromatic hydrocarbons (PAHs) were below the detection limits. ... In surface waters, the concentrations of metals leached from RAP were below the EPA water quality limits (WQLs) for protection of aquatic life and human health in freshwaters

Other similar conclusions were drawn by the study authors and summarized in the publication abstract as:

The concentrations of all metals released during the water leach tests were below the water quality limits, except for copper. Column leach tests yielded generally low or non-detectable metal concentrations. The deviation from this trend occurred for copper and zinc concentrations, but they fell below the regulatory limits at 4 and 0.5 pore volumes of flow, respectively. ... Concentrations of all metals from RAP conformed to the water quality standards in surface waters after passing through the natural formation.

Compare the directly-quoted findings above to the summary in the Literature Review:

Aydilek et al. (2017) reported that Cu, Al, B, Ba, Co, Mn, Ni, and Zn exceeded Maryland's ATLS in either batch or column tests. Of those, Cu and Zn also exceeded US EPA WQLs.

Again, the original study does not support the Report's selective summary, which fails to comprehensively and accurately reflect the conclusions from the original study.

Birgisdóttir et al. (2007)

In the case of conclusions from the Birgisdóttir et al. (2017) study, we must bring to light significant inaccuracies in the Literature Review. Birgisdóttir et al. (2017) specifically looked at the ability of PAHs to leach or transfer from asphalt pavement to soil adjacent to the road. The study focused on two types of asphalt pavement: one in use for over 20 years at a gas station and one on a typical roadway. In each sample, the study analyzed both the lower courses (base material) and the upper roadway wearing courses. In both cases, regardless of the levels of PAHs in the lower courses, the upper courses showed higher PAH concentration, and as expected, the gas station contaminated surface course had substantially elevated PAH concentrations as compared to the roadway surface material. As the Literature Review correctly points out, only one asphalt sample showed PAH concentrations higher than Danish soil criteria — that sample was from the surface course of the gas station. This is to be expected; the surface of the wearing course pavement at the gas station included decades of potentially spilled gasoline and diesel fuel. These fuels, in contrast to asphalt, include lighter-end, more mobile PAHs that can potentially migrate a short distance from the source (e.g., 1 meter in this study). The key distinction is that asphalt PAHs are **not** mobile and are essentially “locked in” to the RAP. Asphalt, by its chemical nature, simply cannot readily migrate into the environment. Even using the most contaminated asphaltic samples, the study authors found:

Assuming that the PAHs leached are accumulated in the uppermost 5 cm of the soil (or gravel) under and 1 m next to the road ... the concentration of those PAHs ... after 25, 50, and 100 years of leaching ... is far below the Danish soil quality criteria, and it can be expected that leaching of PAHs from bitumen based asphalt will only slightly influence the amount of PAHs in soils near roads.

Compare these direct study findings to the synopsis provided in the Literature Review: “the total content of PAHs in the wear course exceeded Danish soil quality criteria.” The Literature Review Report also surprisingly asserted that: “exposure to roadways was identified as a major contributor of contaminants that were available for leaching.”

Conclusions in the Literature Review are not supported by the plain language of the Birgisdóttir study.

Credibility and Validity of the Revised Draft Questioned

As evidenced above, ***we strongly question the credibility and validity of the Literature Review.*** We encourage both Thurston County and the Report's authors to have direct dialogue with the original research study authors in order to fully understand their original research study results and we implore Thurston County to not rely on summarizations of these studies by Herrera Environmental, a third party. We also urge Thurston County to recognize the plain, overwhelming reality that RAP is stockpiled, processed, and recycled continuously throughout the state and across the country, in thousands of jurisdictions, without incident and to the net benefit of the public.

Summary

Instead of comparing the Literature Review's summary statements for the five other studies to the actual findings of the study authors, we emphasize the following:

- 1) In decades of environmental and transportation agency studies, and in decades of independent academic research, including those mischaracterized in the Revised Draft, there appears limited if any concern associated with stormwater runoff or leachate from RAP stockpiles.
- 2) Across the U.S., we know of no other agency, county, or municipality that restricts the stockpiling of RAP. All recognize the material as environmentally safe.
- 3) Summaries of the identified studies (in the Literature Review) significantly mischaracterize the original research results to such an extent that it raises ***real concerns about the validity and credibility of the findings.***

We encourage Thurston County to closely review our comments, to take into account the decades of environmentally safe management of RAP stockpiles in Washington state and across the nation, and to understand the importance of RAP as a sustainable recycled material for roadbuilding, the use of which has significant public benefits.

Over the decades, NAPA has accumulated numerous research articles reviewing RAP leachate and we are happy to provide those references to Thurston County, as well as to have an open discussion of any RAP leachate concerns.

Best Regards,



Howard Marks, Ph.D., JD, MPH
Vice President, Environment, Health & Safety
National Asphalt Pavement Association
5100 Forbes Blvd.
Lanham, MD 20706
(301) 731-4748



David Gent, P.E.
Executive Director
Washington Asphalt Pavement Association
451 SW 10th Street, Suite 110A
Renton WA 98057
(425) 207-8814

Maya Teeple

From: Thurston County | Send Email <spout@co.thurston.wa.us>
Sent: Thursday, June 13, 2019 2:16 PM
To: Shannon Shula
Subject: Asphalt Recycling Plant

This email was created by the County Internet web server from the email masking system. Someone from the Public has requested to contact you with the following information:

To: **Shannon Shula**

Subject: **Asphalt Recycling Plant**

From: **Pamela Keeley**

Email (if provided): **pamkeeley@mac.com**

Message:

NO asphalt recycling plant without consultation with Nisqually Tribe. Honor the treaties. No more pollution!

Revised 1/22/2017

Maya Teeple

From: Thurston County | Send Email <spout@co.thurston.wa.us>
Sent: Thursday, June 13, 2019 2:16 PM
To: Shannon Shula
Subject: recycling asphalt plant NO

This email was created by the County Internet web server from the email masking system. Someone from the Public has requested to contact you with the following information:

To: **Shannon Shula**

Subject: **recycling asphalt plant NO**

From: **Benita K. Moore**

Email (if provided): **ebby253@gmail.com**

Message:

**ASPHALT RECYCLING PLANT OFF RESERVATION ROAD IN NISQUALLY... GROUND WATER
CONTAMINATION WILL HAPPEN ! THERE HAS BEEN NO MEANINGFUL CONSULTATION WITH THE
NISQUALLY TRIBE ... NO ENVIRONMENTAL IMPACT STUDY #WATERPROTECTORS #AIRQUALITY**

Revised 1/22/2017

Maya Teeple

From: Thurston County | Send Email <spout@co.thurston.wa.us>
Sent: Thursday, June 13, 2019 2:16 PM
To: Shannon Shula
Subject: Nisqually Nation environmental health!

This email was created by the County Internet web server from the email masking system. Someone from the Public has requested to contact you with the following information:

To: **Shannon Shula**

Subject: **Nisqually Nation environmental health!**

From: **Beverly Finlay**

Email (if provided): **berafin@yahoo.com**

Message:

PLEASE RESPECT NATIVE AMERICANS! Let's pretend this Tribe were white folk. Treat THESE FOLK with the same respect. Conduct surveys, DO RESEARCH honestly! Clean water is the most precious resource on this Planet - RESPECT THE PLANET AND HER PEOPLE!

Revised 1/22/2017

Maya Teeple

From: Shannon Shula
Sent: Friday, June 14, 2019 11:07 AM
To: Karenlwhite1962@yahoo.com
Cc: Maya Teeple
Subject: Fw: Asphalt plant

Karen,

Thank you for submitting your comment for the recycled asphalt policy review. We have received your email and it will be added to the public comments.

Sincerely,

Shannon Shula
 Associate Planner
 Thurston County Community Planning & Economic Development
 2000 Lakeridge Drive SW, Olympia, WA 98502
 (360) 786-5474 | shannon.shula@co.thurston.wa.us

Email may be considered a public record subject to public disclosure under RCW 42.56

From: Thurston County | Send Email <spout@co.thurston.wa.us>
 Sent: Friday, June 14, 2019 6:19:32 AM
 To: Shannon Shula
 Subject: Asphalt plant

This email was created by the County Internet web server from the email masking system. Someone from the Public has requested to contact you with the following information:

To: Shannon Shula
 Subject: Asphalt plant
 From: Karen white
 Email (if provided): Karenlwhite1962@yahoo.com

Message:

Asphalt plants don't belong near water!,asphalt is harmful to fish,it contains PHA and bitumen reducing their fat stores ,causing their heart muscle to stiffen and causes kidney damage,reducing their chance of survival their first year at sea.
 Revised 1/22/2017

Maya Teeple

From: Thurston County | Send Email <spout@co.thurston.wa.us>
Sent: Friday, June 14, 2019 3:58 PM
To: Shannon Shula
Subject: Nisqually Sub Area Plan Review

This email was created by the County Internet web server from the email masking system. Someone from the Public has requested to contact you with the following information:

To: **Shannon Shula**

Subject: **Nisqually Sub Area Plan Review**

From: **Phyllis Farrell**

Email (if provided): **7600 Redstart Dr. SE, Olympia, WA 98513**

Message:

I am opposed to the current proposal by Lakeside Industries to amend the Nisqually Subarea Plan Policy E.5 to remove the existing policy language that prohibits asphalt reprocessing (recycling) within the Nisqually Subarea. The current plan prohibits the manufacture of recycled asphalt in the Nisqually area due to water quality concerns. That has not changed. Piles of recycled asphalt are known to leach toxic chemical affecting groundwater. I find it preposterous to consider the proposal given the proximity of the Nisqually River and potential flooding. The environmental effects of increased truck traffic should be considered as well.

I am not opposed to the manufacture of asphalt (we all use roads), but the Nisqually sub area's groundwater should not be jeopardized.

Respectfully,

Phyllis Farrell

Revised 1/22/2017

Maya Teeple

From: David Hillman <davidhillman@hotmail.com>
Sent: Friday, June 14, 2019 2:54 PM
To: Shannon Shula
Subject: Recycled Asphalt Pavement Literature Review

I have read the literature review concerning recycled asphalt pavement (RAP) contaminant leaching that was prepared by Herrera Environmental Consultants, Inc.

It indicates that chemicals and metals are leached into surface and ground water from stockpiles of RAP at levels that exceed Washington State groundwater quality standards. One of the studies reviewed (Norin and Strömwall) concluded that their findings:

"clearly show that the release of organic pollutants from asphalt storage could cause environmental problems."

The literature review also concludes this: "As a source of contaminants, RAP is highly variable. Factors contributing to variability in leachate from RAP appear to include the asphalt manufacturing process, the RAP source, the duration and degree to which it has weathered and been exposed to pollution generating sources, and how long it is stored."

What I take from this and other parts of the review is that the pollutants can vary widely and significantly in type and concentration. The stockpiled RAP can come from sources as varied as a heavily used highway, to a shopping center parking lot, to a roadway or storage area at a toxic industrial site. It would be nearly impossible to know exactly what kinds of chemicals and metals are present in any particular RAP stockpile. Thus the citizens of the Nisqually Sub-Area would have little to no idea exactly what metals and toxic chemicals are entering their creeks, rivers, fisheries, estuary, shellfish farms, farmland irrigation sources, and most importantly, their drinking water. Nor would they know at what concentrations these variably unknown contaminants are leaching into their ecosystem and water supply.

In talking over the RAP literature review with family, neighbors, and friends in the Nisqually Sub-Area, and in reading the Nisqually Sub-Area Plan, I have come to the conclusion that this RAP literature review solidly supports the original language in section E.5 of the Nisqually Sub-Area Plan that prohibits asphalt recycling in the Sub-Area. The fact that the proposed language change in section E.5 is a 180 degree stance to the original language obviously points out that THE RECYCLED ASPHALT PAVEMENT LITERATURE REVIEW DOES NOT SUPPORT THE PROPOSED LANGUAGE CHANGE IN ANY WAY.

I will quote a part of the RAP literature review introduction, as it efficiently and very clearly explains my point:

"Between the time when RAP is removed and when it is reused, it must be stockpiled. When stockpiled, precipitation falling onto the stockpile can result in contaminants leaching from the RAP. These contaminants can then be transported to nearby surface waters or infiltrated to groundwater. The latter is especially a concern in areas where the groundwater is more vulnerable to contamination due to fast-draining soils and where it is used as a drinking water supply, such as in the Nisqually area of Thurston County. Because of concerns about RAP leaching contaminants while it is stockpiled, the Nisqually Sub-Area plan of the Thurston County Comprehensive Plan specifically prohibits the use of mined-out gravel pits for the reprocessing of asphalt due to water quality concerns."

To make myself perfectly clear, after reading the above mentioned materials I have reached this conclusion: As a resident and citizen of the Nisqually Sub-Area, I am strongly against changing the language in section E.5 of the Nisqually Sub-Area Plan to allow asphalt recycling.

Warmest Regards,

David Hillman

Maya Teeple

From: Julie <cj_hillman@hotmail.com>
Sent: Friday, June 14, 2019 2:57 PM
To: Shannon Shula
Subject: Recycled Asphalt Pit (RAP)

I have read the literature review concerning recycled asphalt pavement (RAP) contaminant leaching that was prepared by Herrera Environmental Consultants, Inc.

It indicates that chemicals and metals are leached into surface and ground water from stockpiles of RAP at levels that exceed Washington State groundwater quality standards. One of the studies reviewed (Norin and Strömwall) concluded that their findings:

"clearly show that the release of organic pollutants from asphalt storage could cause environmental problems."

The literature review also concludes this: "As a source of contaminants, RAP is highly variable. Factors contributing to variability in leachate from RAP appear to include the asphalt manufacturing process, the RAP source, the duration and degree to which it has weathered and been exposed to pollution generating sources, and how long it is stored."

What I take from this and other parts of the review is that the pollutants can vary widely and significantly in type and concentration. The stockpiled RAP can come from sources as varied as a heavily used highway, to a shopping center parking lot, to a roadway or storage area at a toxic industrial site. It would be nearly impossible to know exactly what kinds of chemicals and metals are present in any particular RAP stockpile. Thus the citizens of the Nisqually Sub-Area would have little to no idea exactly what metals and toxic chemicals are entering their creeks, rivers, fisheries, estuary, shellfish farms, farmland irrigation sources, and most importantly, their drinking water. Nor would they know at what concentrations these variably unknown contaminants are leaching into their ecosystem and water supply.

In talking over the RAP literature review with family, neighbors, and friends in the Nisqually Sub-Area, and in reading the Nisqually Sub-Area Plan, I have come to the conclusion that this RAP literature review solidly supports the original language in section E.5 of the Nisqually Sub-Area Plan that prohibits asphalt recycling in the Sub-Area. The fact that the proposed language change in section E.5 is a 180 degree stance to the original language obviously points out that THE RECYCLED ASPHALT PAVEMENT LITERATURE REVIEW DOES NOT SUPPORT THE PROPOSED LANGUAGE CHANGE IN ANY WAY.

I will quote a part of the RAP literature review introduction, as it efficiently and very clearly explains my point:

"Between the time when RAP is removed and when it is reused, it must be stockpiled. When stockpiled, precipitation falling onto the stockpile can result in contaminants leaching from the RAP. These contaminants can then be transported to nearby surface waters or infiltrated to groundwater. The latter is especially a concern in areas where the groundwater is more vulnerable to contamination due to fast-draining soils and where it is used as a drinking water supply, such as in the Nisqually area of Thurston County. Because of concerns about RAP leaching contaminants while it is stockpiled, the Nisqually Sub-Area plan of the Thurston County Comprehensive Plan specifically prohibits the use of mined-out gravel pits for the reprocessing of asphalt due to water quality concerns."

To make myself perfectly clear, after reading the above mentioned materials I have reached this conclusion: As a resident and citizen of the Nisqually Sub-Area, I am strongly against changing the language in section E.5 of the Nisqually Sub-Area Plan to allow asphalt recycling.

Thanks!

Collis J Hillman CJ_Hillman@Hotmail.com

Maya Teeple

From: Thurston County | Send Email <spout@co.thurston.wa.us>
Sent: Friday, June 14, 2019 3:57 PM
To: Shannon Shula
Subject: Nisqually Asphalt Recycling

This email was created by the County Internet web server from the email masking system. Someone from the Public has requested to contact you with the following information:

To: **Shannon Shula**

Subject: **Nisqually Asphalt Recycling**

From: **Daniel Hull**

Email (if provided): **nrnc@nisquallyestuary.org**

Message:

Comment: Hello planning professionals,
 I am writing to let you know that I am not in favor of changing the language in section E.5 of the Nisqually Sub Area plan to allow asphalt recycling. I have read the literature review witch clearly states that this can and does have an effect on the environment. Seeing at Nisqually is one of the finest Watershed where Communities, Non Profits, State, Tribe and Federal entities have worked together over the years to have over 70% of the Nisqually Watershed protected, I truly feel that this is not an activity we should change language to allow. There should be much better places to do an activity like this that will not harm one of the finest Watersheds in Washington State.

I am somewhat alarmed that many of the residents in my area had know idea about this. Please add me to your mailing list as I can help spread the word to the people in my community.

Daniel A. Hull
Chair of the Nisqually Aquatic Reserve Citizen Stewardship committee.
120 citizens Strong.

Revised 1/22/2017

Maya Teeple

From: Ryan Ransavage <Ryan.Ransavage@miles.rocks>
Sent: Friday, June 14, 2019 5:08 PM
To: Shannon Shula
Subject: Comments on the Recycled Asphalt literature Review

Below are comments regarding the Recycled Asphalt Literature Review.

The concern to protect the environment is a concern of all citizens of Washington State. Asphalt is key building material key in supporting the physical and economic growth of the state. Currently, the Department of Ecology (DOE) regulates the runoff from operations that recycle pavement. The limits of the discharge limits have been determined through years of study and research. Limits have been changed for the majority of discharge limits. One of the items that is directly regulated within the DOE Sand & Gravel General Permit is Recycled Asphalt. DOE has determined that water discharged to ground are only limited to pH monitoring and oil sheen monitoring. Discharges to Surfacewater are not currently allowed (S&G General Permit Table 2). RAP also has operational limits put in place regarding material handling practices for RAP and Recycled Concrete aggregate.

It seems appropriate for Thurston County to consider the requirements DOE has determined. These limits have been set to ensure minimal degradation to waters of the state and the overall environment. It seems inappropriate for Thurston County to subvert the standards set by DOE as they have both determined impact level and are responsible for compliance with both the national and state clean water act.

Miles Sand & Gravel supports RAP operations be allowed within all areas of Thurston County when meeting current regulatory standards from solid waste rules and Sand and Gravel General Permit conditions.

Thank you



RYAN RANSVAGE

Office: 253.833.3705 x 436

Mobile: 253.377.1760

400 Valley Ave NE • Puyallup, WA 98372-2516

WWW.MILES.ROCKS

RECYCLED ASPHALT PLANT (RAP) in the NISQUALLY SUBAREA? WE SAY NO!

We the undersigned submit this document as public comment to the Consultant Literature Review Report by Herrera Environmental Consulting. Key summary points from this review include:

"Recycled asphalt pavement (RAP) is typically asphalt that has been removed from roadways or parking lots during repair and replacement of the roadway surface. It is then reused extensively in the creation of new roadway surfaces. Concerns over possible leaching of pollutants from RAP stem from the original composition of the asphalt as well as from the pollutants added during its use, for example, when the RAP has been taken from roadways where it has been exposed to vehicle traffic and the metals and petroleum products that are associated with that use."

"Contaminants [can] leach from RAP at concentrations that exceeded state groundwater quality standards. There were five polycyclic aromatic hydrocarbons (PAHs) that were measured above state groundwater quality standards... Some metals were also leached, primarily in tests run under low pH environments [e.g. in much of Thurston County]." <https://www.thurstoncountywa.gov/planning/Pages/comp-plan-cp11-home.aspx>

Based on Herrera's review, we urge Thurston County Commissioners

- To hire consultants to do additional study
- And NOT to rezone this area to permit RAP

NAME	ADDRESS	EMAIL (optional)
Nancy Armstrong	P.O. Box 1441. Oly WA 98501	Nancy Armstrong
Cheryl Duryea	3616 Sunset Blvd	Cheryl Duryea
Robert C Zeigler	1102A Creek Road SE	Robert C Zeigler
Therese Sprunger	2331 M. Hood SE Lacey	T. Sprunger
JOHN M. DAVIS	60 SECURIE WY SHELTON	John M Davis
Frederick Romero	2023 Westlake SE Lacey	Frederick Romero
Catherine Schuison	3341 Bloomfield Rd. Shelton	Catherine Schuison
Lou Ann Durlap	1698 Vista Lp SW Tumwater	louann.durlap@abolympia.com
Craig Partridge	1698 Vista Lp. SW Tumwater	
Charles J. J. J.	4045 45th AVE SW #37 OLYMPIA WA 98512	
Margaret Fairchild	9017 Meridian Ct NE Lacey 98514	
TRAVIS BUTLER	1037 Waller St NE Olympia 98514	
Toni Houghton	1832 LAKEWOOD CIR SE. 98501	
Dave Mortensen	2080 E Spencer Ln Rel Shelton WA	
Loreen Ryan	1115 San Francisco Ave NE Oly 98506	
John Nelson	1741 Pursh. NE Oly 98506	
Ann Egerton	P.O. Box 1205 Shelton	
Matthew Moseley	P.O. Box 291 E Lacey	

JUN 14 2019

Return these signatures to Shannon.Shula@co.thurston.wa.us by 5:00 on Friday 14 June (or hand-deliver to the County Courthouse – Planning Division)

We the undersigned submit this document as public comment to the Consultant Literature Review Report by Herrera Environmental Consulting. Key summary points from this review include:

“Contaminants [can] leach from RAP at concentrations that exceeded state groundwater quality standards. There were five polycyclic aromatic hydrocarbons (PAHs) that were measured above state groundwater quality standards... Some metals were also leached, primarily in tests run under low pH environments [e.g. in much of Thurston County].” <https://www.thurstoncountywa.gov/planning/Pages/comp-plan-cp11-home.aspx>

- To hire consultants to do additional study
- And NOT to rezone this area to permit RAP

Return these signatures to Shannon.Shula@co.thurston.wa.us by 5:00 on Friday 14 June (or hand-deliver to the County Courthouse – Planning Division).

“Recycled asphalt pavement (RAP) is typically asphalt that has been removed from roadways or parking lots during repair and replacement of the roadway surface. It is then reused extensively in the creation of new roadway surfaces. Concerns over possible leaching of pollutants from RAP stem from the original composition of the asphalt as well as from the pollutants added during its use, for example, when the RAP has been taken from roadways where it has been exposed to vehicle traffic and the metals and petroleum products that are associated with that use.”

“Contaminants [can] leach from RAP at concentrations that exceeded state groundwater quality standards. There were five polycyclic aromatic hydrocarbons (PAHs) that were measured above state groundwater quality standards... Some metals were also leached, primarily in tests run under low pH environments [e.g. in much of Thurston County].” <https://www.thurstoncountywa.gov/planning/Pages/comp-plan-cp11-home.aspx>

- To hire consultants to do additional study
- And NOT to rezone this area to permit RAP

[illegible]

Return these signatures to Shannon.Shula@co.thurston.wa.us by 5:00 on Friday 14 June (or hand-deliver to the County Courthouse – Planning Division)

Maya Teeple

From: Thurston County | Send Email <spout@co.thurston.wa.us>
Sent: Saturday, June 15, 2019 7:46 PM
To: Shannon Shula
Subject: Asphalt plant

This email was created by the County Internet web server from the email masking system. Someone from the Public has requested to contact you with the following information:

To: **Shannon Shula**

Subject:

From: **Faith Morgan**

Email (if provided):

Message: **No to the plant!!!**

Revised 6/15/2019

Maya Teeple

From: Esther Grace Kronenberg <wekrone@gmail.com>
Sent: Sunday, June 16, 2019 11:10 PM
To: Shannon Shula
Subject: RAP in Nisqually Valley

Dear Ms. Shula,

Please excuse the lateness of this comment. I only became aware of it this weekend.

I stand opposed to the processing of recycled asphalt at the Holroyd site for the following reasons.

1. The lower Nisqually valley is classified by Thurston County as a Wellhead Protection Area. It is also protected, as a rural environment, by a Thurston County Sub-Area Plan.
2. The water sources for all residents in the lower valley are from wells. Many residents, but not all, get drinking water from a Lacey City well next to the Nisqually River - less than a half mile from Lakeside's Asphalt Plant. The plant sits in the permeable soil of Holroyd's Gravel Mine at the very beginning of the Nisqually Delta in lower Nisqually Valley. The mine sits in the 100 year floodplain of the Nisqually River.
3. Lakeside knew RAP was not allowed before they built their new plant at Holroyd's pit. Two court decisions reaffirmed they could not use RAP in Nisqually Valley. Olympic Region Clean Air Agency (ORCAA) reaffirmed they could not, due to Sub-Area Plan rules. Department of Natural Resources (DNR) and the Sub-Area Plan say they have to move out when the pit is mined out. Will they? Or, will they want increased truck traffic and change infrastructure to haul in gravel from another pit as well as RAP? This would also be in violation of the Sub-Area Plan. Doesn't the County have an obligation to honor its own plans and policies that are made with public input for the public good, or can they be ignored to further private interests? If not, isn't this government for the highest bidder?
4. If Lakeside is allowed to process recycled asphalt pavement (RAP), best practices state that asphalt be processed at a lower temperature to reduce air pollution, and kept under cover and out of the weather before and during its use to prevent chemical leaching into the groundwater. Keeping the RAP stockpile below 20 feet high and covered with a shelter or building to minimize moisture is essential to protecting the ground water, especially as the permeable soil of the Holroyd pit is only 15 feet above an aquifer water table.

Thank you for including these comments.

Esther Kronenberg

Maya Teeple

From: Sandra Herndon <sherndon@hctc.com>
Sent: Monday, June 17, 2019 7:52 AM
To: Shannon Shula
Cc: Karen Fraser; Karen Verrill; EJ Zita; Paula Holroyde; Carol Goss
Subject: recycled asphalt plant

Please accept this comment from the League of Women Voters even though it was due on Friday. Thank you. slh

TO: Thurston County Community Planning

FROM: Thurston League of Women Voters, Sandra Herndon, President

I am writing to express grave concern about the proposed recycled asphalt plant in Nisqually. The League believes that concerning water resources, the overriding consideration should be protecting the quantity and the quality of the water resource. It is critical always to err on the side of safety and caution when it comes to human health.

The consultant's report is based on laboratory tests and specifically states that in order to be definitive, testing under field conditions would be necessary. They state what all researchers know, that "batch and column laboratory tests, while informative, are not necessarily representative of what can be expected under field conditions." The literature review specifically did not include an assessment of potential environmental impact of contaminants.

Given the significance of the issues involved and the consequences of placing this plant in Nisqually, we ask the planning group not to move ahead with this plan.

slh

Maya Teeple

From: Shannon Shula
Sent: Tuesday, June 18, 2019 12:45 PM
To: Maya Teeple
Subject: FW: That freaking water plant

[RAP comments?](#)

From: Thurston County | Send Email [mailto:spout@co.thurston.wa.us]
Sent: Tuesday, June 18, 2019 12:05 PM
To: Shannon Shula <shannon.shula@co.thurston.wa.us>
Subject: That freaking water plant

This email was created by the County Internet web server from the email masking system. Someone from the Public has requested to contact you with the following information:

To: Shannon Shula

Subject:

From: Kathy Lawhon

Email (if provided):

Message: **Please do not allow this water plant here. We are fast running out of water, and the idea of letting them profit off the water they will then sell back to us, is insane. We are already in moderate drought in Seattle and Tacoma, and summer is just getting started. This is crazy.**

Revised 6/15/2019