



MATTHEW G. BEVIN
GOVERNOR

CHARLES G. SNAVELY
SECRETARY

ENERGY AND ENVIRONMENT CABINET
Department for Environmental Protection

ANTHONY R. HATTON
COMMISSIONER

300 SOWER BOULEVARD
FRANKFORT, KENTUCKY 40601

July 12, 2018

Honorable Greg Fischer
Louisville Metro Government
527 W. Jefferson St
Louisville, Kentucky 40202

RE: 2018 Rubber-Modified Asphalt Grant for thin overlay, Jefferson County/Louisville Metro

Dear Mayor Fischer:

Congratulations on submitting a successful application for a Rubber-Modified Asphalt Grant for the thin overlay! The Energy and Environment Cabinet is looking forward to working with your county on this project. Please take a moment to review the required conditions for grant funding:

- The recipient must sign a written agreement stating the terms and conditions of the grant and indicating the recipient agrees to complete the rubber-modified asphalt grant project for the thin overlay as defined in the agreement. Please review all requirements in the attached agreement.
- The grant funding is to be used for costs associated with the application of rubber-modified asphalt for thin overlay as specified in your grant application.

If you agree to meet these required conditions, **please sign the attached grant agreement and return by July 27, 2018 either by email to bryon.bland@ky.gov, or to the address below.**

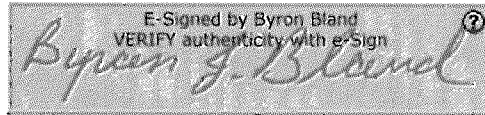
Bryon "BJ" Bland, Coordinator
Recycling and Local Assistance Branch
Kentucky Division of Waste Management
300 Sower Boulevard
Frankfort, KY 40601

Honorable Greg Fischer
July 12, 2018
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If you plan a local event to publicly announce obtaining the grant, or later to celebrate the completion of the project, please let us know.

If you have questions or are unable to meet the required conditions, contact B. J. Bland at 502-782-6556. Thank you.

Sincerely,

An e-signature block containing the text "E-Signed by Byron Bland" and "VERIFY authenticity with e-Sign" above a handwritten signature of "Byron J. Bland" in cursive. A small question mark icon is visible in the top right corner of the signature area.

Byron "BJ" Bland
Recycling & Local Assistance Branch

cc: Matthew Haines (matthew.haines@louisvilleky.gov)
Attachment: Rubber-Modified Asphalt Grant Agreement

RUBBER-MODIFIED ASPHALT GRANT AGREEMENT

We, the Grantee, hereby request 2018 Rubber Modified Asphalt Grant (RMAG) funding that is in accordance with KRS 224.50-878. These funds will be used to pay for costs directly associated with the placement of chip seal or thin overlay utilizing rubber-modified asphalt as specified in our grant application. We, the Grantee, understand and agree to the following:

1. Be solely responsible for completing the RMAG project and assume all liabilities associated with the completion of the grant.
2. Adhere to all stipulations and conditions as put forth in the grant application.
3. Utilize the county’s standard competitive bid process to any contractor for the RMAG.
4. Ensure that scope of project matches that set forth in the submitted application.
5. Ensure that specifications for the application of chip seal follow specifications set forth by the State of Kentucky, Missouri, or Tennessee. **Specifications shall be submitted at least 14 days prior to start of construction and approved by the cabinet.**
6. Be solely responsible for any additional costs that exceed the original project budget.
7. Complete construction project by **December 31, 2018.**
8. Submit a construction progress report within thirty (30) days of the end of the grant period.
9. Submit progress reports on January 31, 2021 and January 31, 2023.
10. Agree to reimburse the cabinet all unspent grant funding within thirty (30) days of the end of the grant period.
11. If grant funds are not spent appropriately, the cabinet has the authority to seek reimbursement of all grant funds.
12. Failure to comply with the conditions of the agreement may result in forfeiture of all associated grant funding.
13. This grant agreement is in full force and effect until a final closure letter is received from the Cabinet.

Grantee: Jefferson County/Louisville Metro Government _____ _____ _____
Applicant Name **Federal ID #**

444 S. 5th Street _____ Louisville _____ 40202 _____
Address **City** **Zip Code**

Signature: _____
Owner’s Authorizing Official **Date**

Signature: _____
Project Coordinator/Contact **Date**



**KENTUCKY ENERGY &
 ENVIRONMENT CABINET**

COMMONWEALTH OF KENTUCKY



2018 WASTE TIRE MARKET DEVELOPMENT RUBBER-MODIFIED ASPHALT GRANT APPLICATION



PURPOSE

This grant provides financial assistance to projects that further the goals of the Kentucky Waste Tire Program by promoting development of markets for rubber-modified asphalt using waste tires generated in Kentucky



Energy and Environment
Cabinet



2018 KENTUCKY WASTE TIRE RUBBER-MODIFIED ASPHALT GRANT APPLICATION FORM

GENERAL INFORMATION

The cabinet is accepting grant proposals for projects that will promote and assess the benefits of the use of recycled Kentucky waste tires in rubber-modified asphalt for chip seal and asphalt overlay projects. **Rubber-modified asphalt** involves amending standard asphalt with crumb rubber derived from recycled waste tires. **Chip-seal** is a pavement surface treatment that combines one or more layers of liquid asphalt with one or more layers of fine aggregate, while **asphalt overlay** consists of a new layer of asphalt applied over an existing asphalt surface. The thickness of an overlay for the purposes of this project should not exceed 1.5 inches.

Depending on the application, rubber-modified asphalt has numerous potential benefits including increased skid resistance, increased road life, and noise reduction, in addition to providing a valuable end use for recycled waste tires. The objective of this grant is to determine if rubber-modified asphalt can provide superior performance to standard asphalt in certain applications.

Tire derived crumb rubber is recognized by the Transportation Research Board to improve asphalt. The following is taken from *Chip Seal Best Practices, NCHRP Synthesis 342, National Cooperative Highway Research Program*, Transportation Research Board, AASTHTO, 2005, available at: <http://www.trb.org/Publications/Blurbs/155807.aspx>

“Recognize that both hot asphalt cement and emulsified asphalt binders can be used successfully on high-volume roads. The selection of binders modified by polymers or crumb rubber seems to reinforce success.”

Rubber is also discussed by various agencies to be used in thin overlays to make quieter and longer lasting pavements. The following excerpts are from *Thin Asphalt Concrete Overlays, NCHRP Synthesis 464, National Cooperative Highway Research Program*, Transportation Research Board, AASTHTO, 2014. The publication is available at <http://www.trb.org/Publications/Blurbs/171104.aspx>

“Reduce noise at the tire-pavement interface when fine graded mixtures are used”

“The analysis showed that the quietest one-third of the pavements were either OGFC pavements or pavements with crumb rubber included in the mixture”

Rubberized asphalts:

- *Resist pot hole formation*
- *Resist rutting*
- *Have shorter stopping distances*
- *Have longer useful lives*
- *Can be recycled and reused in additional pavement applications*

**2018 KENTUCKY WASTE TIRE
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This grant will fund the installation of **either** chip seal or thin asphalt overlay utilizing rubber-modified asphalt. **Applicants are not eligible for both options and must choose between the chip seal or the asphalt overlay.** This grant will provide funding for:

The purchase and application of 24,000 square yards of material (rubber-modified asphalt and aggregate) to **chip seal** a county road. With a road that has the average lane-width of 10 feet, this amount of material is sufficient to apply one layer of chip seal over approximately four lane-miles, two layers over two lane-miles, or three layers over approximately 1.33 miles.

-OR-

The purchase and application of 12,000 square yards of material (rubber-modified asphalt and aggregate) to add an **asphalt overlay** no greater than 1.5 inches in thickness to a county road. With a road that has the average lane-width of about 10 feet, this amount of material is sufficient to apply an overlay over approximately 1.5 lane-miles.

Grantees will be required to complete an equivalent area of paving using standard asphalt chip seal or overlay, on a section of road of similar age, condition, topography, traffic volume and type as the test section, for the purpose of comparison of standard versus rubber-modified asphalt.

Grant Conditions:

1. Project documentation will include a Construction Completion Report and two Progress Reports documenting the condition of the road over five years. Reports will include a narrative description of road conditions, photographs, and any other relevant information.
2. Grantees will conduct no additional maintenance or repairs on either section during the five year monitoring period. If at any point repairs are deemed necessary for public safety, the county will contact the cabinet to receive written approval for maintenance over any unsafe sections.
3. The cabinet will fund only the costs associated with the installation of rubber-modified asphalt section of road, plus any associated testing and documentation performed by the cabinet or a third-party contractor.
4. The cabinet reserves the right to modify the scope of any project or otherwise add conditions to the awarded project grant.
5. Applicants may include only county or urban county governments.

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6. The cabinet must approve the rubber-modified asphalt materials, contractor, and pavement specifications prior to the grantee entering into purchase agreements.
7. The applicant must follow state or federal chip seal or thin asphalt overlay specifications, in a manner agreed upon with the cabinet.
8. The applicant must submit an itemized cost estimate with application.
9. The County will allow access to the finished project for inspection, testing, and placement of signage by the cabinet.
10. The cabinet reserves the right to alter or suspend the grant program to accommodate other programmatic needs or initiatives.
11. Failure to comply with reporting requirements may result in the grantee being required to reimburse the cabinet for all funds received, and ineligibility for future EEC grants.
12. Any change to the proposed project, after the grant is awarded, must be approved by the cabinet in writing before the change is made.
13. If a county or urban county government is out of compliance with its Solid Waste Management Plan, that county or urban county government is ineligible to receive this grant.
14. No contractor, subcontractor, consultant, vendor, or supplier, or any employee or representative thereof, shall be an employee of the applicant.
15. Funding for this grant is dependent upon the availability of funding, not otherwise obligated, in the waste tire trust fund established in KRS 224.50-880. This is a competitive grant and the cabinet expects to receive applications for many more projects than it is able to fund.

HOW APPLICATIONS WILL BE EVALUATED BY THE CABINET:

Applications will be prioritized by:

1. The most efficient projects that generate the best information for the cost.
2. The condition of the road that is to be chip sealed or asphalt overlaid: the cabinet will not award a grant for a project over a road that has a very poor base or surface conditions (Ex. Shoulder failure, large alligator cracking, large pot holes, poor culvert crossings).

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3. Similarity of rubber-modified and standard asphalt sections to be paved; in age, condition, topography, and traffic volume and type.
4. Projects that are geographically distributed across all areas of the state.
5. Previous experience with chip seal, thin overlay and/or rubber-modified asphalt projects by county or paving contractor.
6. The cabinet's assessment of the extent to which the proposed project will develop a market for Kentucky waste tires and protect human health, safety, and the environment. Some factors that will be used in this determination are those items outlined in the application, how many grants have previously been awarded in the county; and the project's costs and forecasted benefits.
7. Plans for advertising/signage on the road receiving the project informing the public that the pavement project is part of a 5 year study using RMA.
8. Incomplete applications may not be considered.

1. APPLICANT PROFILE

To be eligible for this grant, applicants must meet the following criteria:

1. Have the legal authority to construct and operate the proposed project;
2. Have the ability to complete the project in compliance with the grant conditions.
3. The applicant and the person who will be managing the project shall not have received a final judgment or conviction of a state or federal environmental statute or regulation in the five (5) years before submitting the application and shall not have any outstanding violations of state or federal environmental statutes or regulations.

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ALL APPLICANTS MUST ANSWER THE FOLLOWING QUESTIONS OR PROVIDE AN EXPLANATION OF WHY THE ITEMS ARE NOT APPLICABLE TO THE PROPOSED PROJECT. You may attach additional pages as required.

County/Urban-County Government Name	Jefferson County, Louisville Metro		
Street Address	444 S 5th St		
Mailing Address	444 S 5th St		
City	Louisville	Zip	40202
Project Contact	Matthew Haines		
E-mail Address	Matthew.haines@louisvilleky.gov		
Phone	502 574 3883	Fax	502 574 4129
Applicant's Name	Matthew Haines		
Federal Tax ID#	[REDACTED]		
Mailing Address	444 S 5th St		
City	Louisville	Zip	40202
Phone	502 574 3883	Fax	502 574 4129
E-mail Address	matthew.haines@louisvilleky.gov		
Signature of Applicant's Authorizing Official		Date	6/5/18
Typed or Printed Name of Official	Jeffrey Brown		
Official Title	Assistant Director		

Choose a Project:

Chip Seal

OR

Asphalt Overlay

**2018 KENTUCKY WASTE TIRE
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2. STATUS OF APPLICANT

- A. Does the applicant have the legal authority to construct and operate the proposed project? Yes No
- B. Does the applicant have the ability to construct the project in compliance with the grant conditions? Yes No
- C. Has the applicant, or the person who will be managing the project for the applicant, received a final judgment or conviction of a state or federal environmental statute or regulation in the five (5) years before submitting the application, or have any outstanding violations of state or federal environmental statutes or regulations? Yes No

3. PROJECT DESCRIPTION

As attachment #1, provide the following information.

- The approximate geographic area, or the community, that will benefit from the project.
- A map indicating the proposed sections of road.
- Representative photos of the proposed sections of road. Provide at least 10 photographs of each proposed section.
- Daily traffic count and description of traffic type for each proposed section.
- Detailed description of the condition of road base for each proposed section.
- Description of prior chip sealing or thin asphalt overlay experience within the county.

4. PROMOTION DETAIL

As attachment #2, provide a plan to inform and educate the surrounding community about the project. You may attach examples of proposed newspaper articles, signage, or other media types intended to be used. (Pertinent facts for the suggested release may be found on our website at [Grants | Recycling and Local Assistance](#)).

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5. MILESTONES

Please list a description of each key task and its approximate completion date. An example, is provided below. This is only an example. Please adjust the task description in your own grant application to describe the type of project you are proposing.

EXAMPLE* Rubberized Asphalt Chip Seal Project *EXAMPLE

Task Description	Estimated Completion Date
1. Prep roadway including pot-hole and structural repair	July 1, 2018
2. Award Contract for rubberized asphalt	August 1, 2018
3. Contact Newspapers, Television and Radio	August 15, 2018
4. Project start, standard asphalt section	September 1, 2018
5. Project start, rubber-modified asphalt section	September 2, 2018
6. Project complete	September 15, 2018
7. Receive sampling documentation from contractor	October 15, 2018
8. Construction Completion Report Due	January 31, 2019
9. Progress Report #1	January 31, 2021
10. Final Progress Report #2	January 31, 2023

Project Name: S 4th St from W Broadway to St Catherine St

Task Description	Estimated Completion Date
Amend current contract or bid new contract for rubberized asphalt	July 13, 2018
Core roadway to better define structural repair	July 20, 2018
Prepare Roadway including pot-hole, structural repairs, and updating sidewalk ramps to meet ADA standards	July 20 to August 24, 2018
Publish Paving project in Metro Public Works e-newsletter "Work's Week"	August 24, 2018
Project start milling and standard asphalt section	August 27, 2018
Project start rubber-modified asphalt section	August 30, 2018
Project complete	August 31, 2018
receive sampling documentation from contractor and/or 3rd party inspections	September 7, 2018
Construction completion report due	January 31, 2019
Progress report #2	January 31, 2021
Progress report #2	January 31, 2023

**2018 KENTUCKY WASTE TIRE
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6. BUDGET DETAIL

Complete the budget table below. All construction work must be completed by December 31, 2018.

EXAMPLE County Rubberized Asphalt Project *EXAMPLE*

Rubberized Asphalt Estimate Summary		COST
Application of rubber_modified asphalt (up to 24,000 square yards for Chip Seal)		
Application of rubber-modified asphalt (up to 12,000 square yards for Thin Overlay not to exceed 1.5 inches in thickness)		\$7.34 / SY
Total Grant Request :		\$88,080.00

- *Insert the total cost from the itemized contractor estimate in the budget detail table above. Attach a copy of the itemized cost estimate.*

The above listed is anticipated costs using current Louisville Metro Paving Contractor, Hall Contracting. To meet compliance with the grant specifications, Hall will consult with Ingevity to meet rubber modified asphalt specification.

7. REPORTS

Construction Completion Report

Grantee must submit by January 31, 2019, a Construction Completion Report consisting of narrative description of project, photographs of the project and installed road signs, any test reports, all invoices, proof of payment and a completed budget worksheet.

Progress Reports

The grantee must submit progress reports, by January 31, 2021 and January 31, 2023. These reports should include:

1. Comments from administrators, project coordinator, officials, and other people knowledgeable about the outcome of the project.
2. Pictures of rubberized-modified asphalt sections and standard asphalt sections.

**2018 KENTUCKY WASTE TIRE
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3. Media reports such as newspaper clips.

Project Reimbursement

Upon completion of the project, a construction completion report (Report 1) with final invoice will be sent to the Division of Waste Management.

Upon receipt, the Division of Waste Management will issue a payment to the selected County covering the approved scope of the rubber-modified asphalt project. The Division of Waste Management will not reimburse for costs over the original projected cost in the application, or for costs associated with any activity other than the purchase and installation of rubber-modified asphalt product in the approved project.

Signature

The head of the applying entity should sign the grant request. For those projects that require official authorization (such as by the urban county government council or county fiscal court), enclose the minutes of the meeting approving the project.

ALL REPORTS SHOULD BE SUBMITTED TO THE ADDRESS BELOW

SUBMISSION

Grant applications must be received **in this office** by close of business (4:30 p.m.) on **June 05, 2018**. No applications will be accepted after June 05, 2018. One completed application and all supporting documentation must be submitted in order for the application to be considered. **Please do not bind or staple the application**. Mail deliver, or email your application to:

**Division of Waste Management
ATTN: BJ Bland
Recycling and Local Assistance Branch
300 Sower BLVD, 2nd Floor
Frankfort, KY 40601
byron.bland@ky.gov**

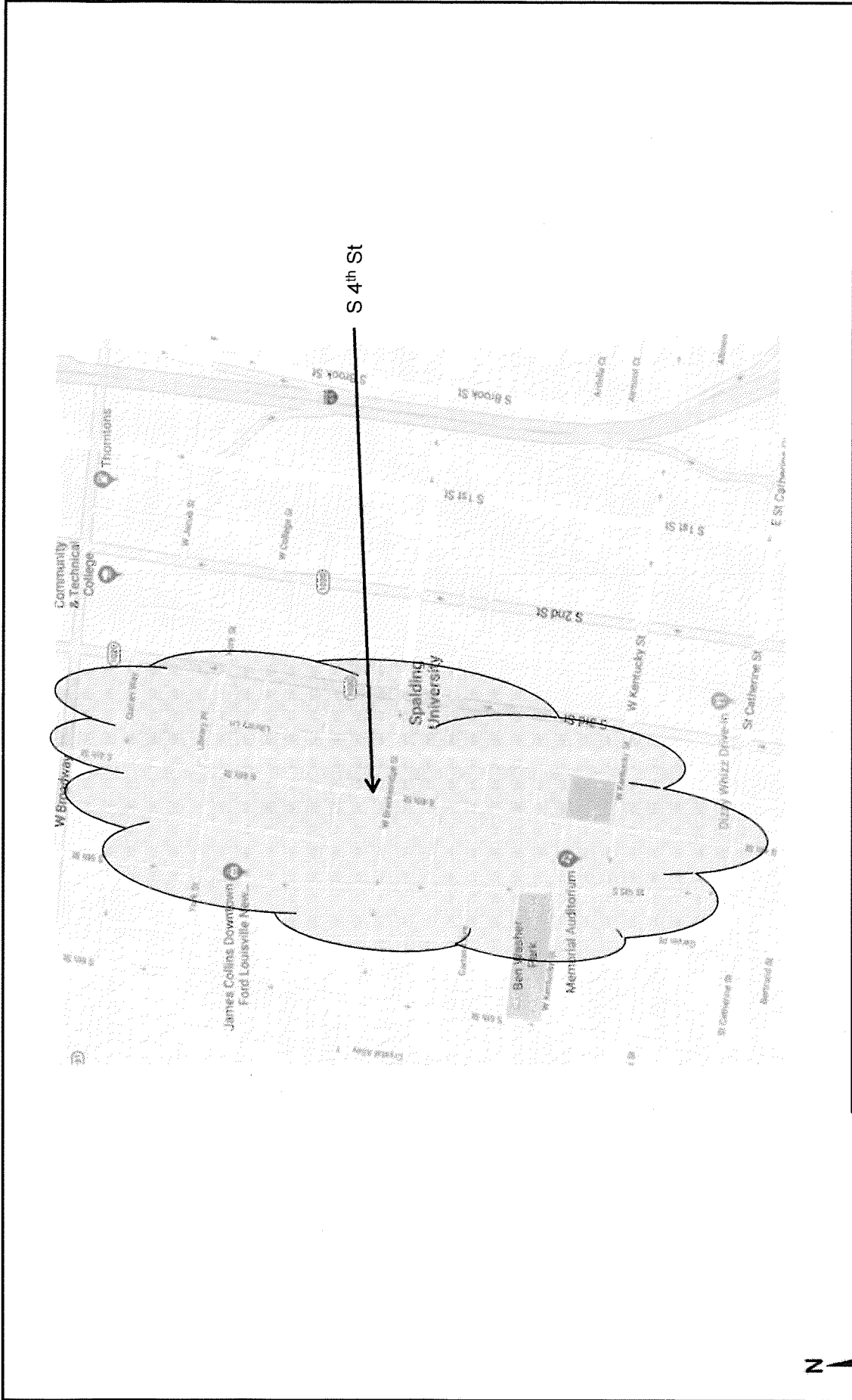
**Direct grant questions to Byron "BJ" Bland at 502-782-6556 or
byron.bland@ky.gov.**

Direct technical questions to Mr. George F. Gilbert, P.E. at 502-598-9860

**2018 KENTUCKY WASTE TIRE
RUBBER-MODIFIED ASPHALT GRANT APPLICATION FORM**

George.gilbert60@gmail.com

Attachment 1



Project Manager:	XXX	Project No.	XXXX
Drawn by:	XXX	Scale:	N.T.S.
Checked by:	XXX	File Name:	
Approved by:	XXX	Date:	6/5/2018





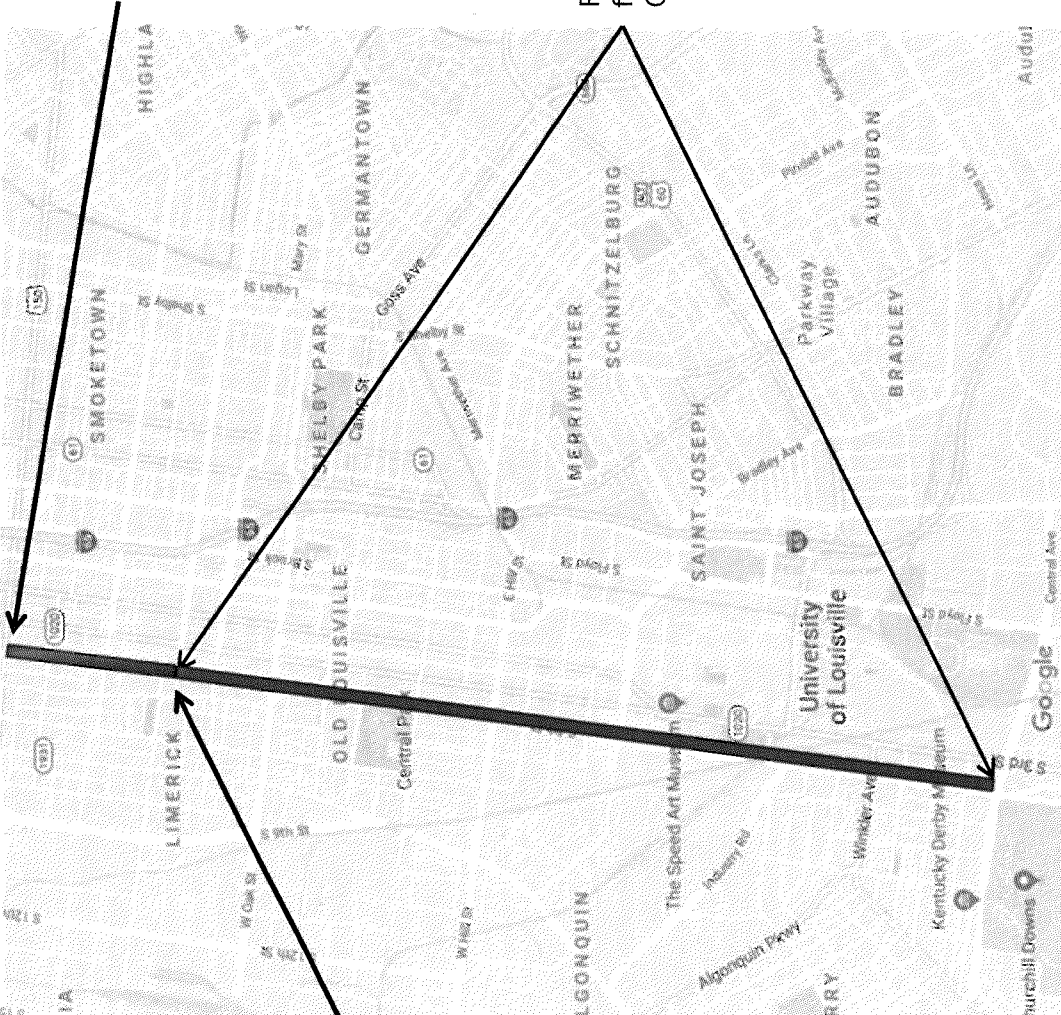
444 S. 5th Street, 4th Floor
 Louisville, Kentucky 40202
 PH. (502) 574-3883 FAX. (502) 574-4129

VICINITY MAP
 S 4th St
 Louisville, KY

Figure
 1

LEGEND

-  Proposed Asphalt Overlay
-  Proposed Rubber Modified Asphalt Overlay



Project Manager:	XXX
Drawn by:	XXX
Checked by:	XXX
Approved by:	XXX
Project No.:	XXXX
Scale:	N.T.S.
File Name:	
Date:	6/5/2018



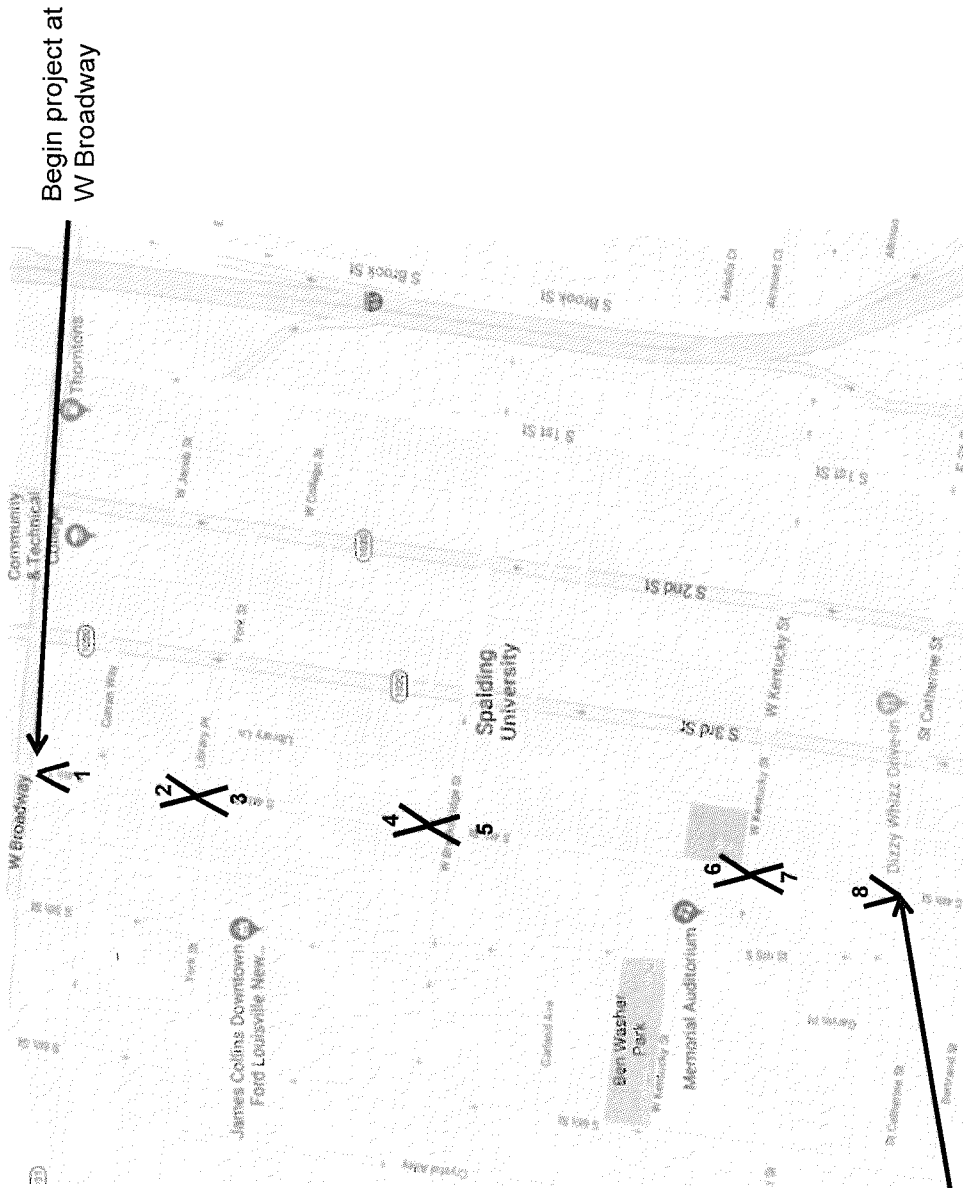
444 S. 5th Street, 4th Floor
 Louisville, Kentucky 40202
 PH: (502) 574-3883 FAX: (502) 574-4129

RUBBER MODIFIED ASPHALT LOCATION PLAN	
S 4 th St Paving Limits Louisville, KY	

Figure	2
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LEGEND

<#> Approximate Photo Location



Begin project at W Broadway

End project at St Catherine St



Project Manager:	XXX	Project No.:	XXXX
Drawn by:	XXX	Scale:	N.T.S.
Checked by:	XXX	File Name:	
Approved by:	XXX	Date:	6/5/2018



444 S. 5th Street, 4th Floor
Louisville, Kentucky 40202
Ph. (502) 574-3863 FAX. (502) 574-4129

PHOTOGRAPH LOCATION MAP

S 4th St
Louisville, KY

Figure

3



Photo #1: S 4th St looking south at W Broadway



Photo #2: S 4th St looking north at York St



Photo #3: S 4th St looking south at York St

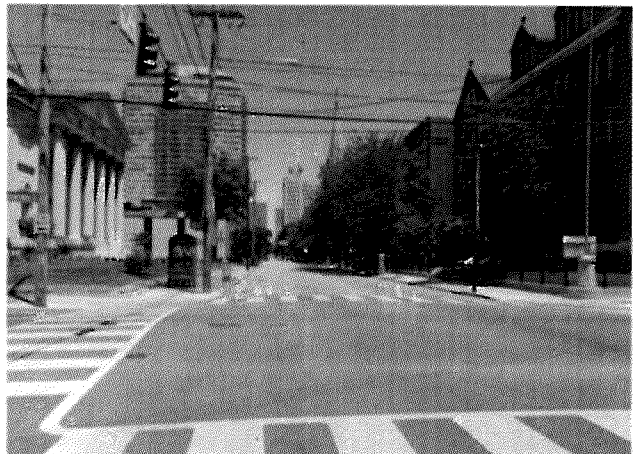


Photo #4: S 4th St looking north at W Breckenridge St



Photo #5: S 4th St looking south at W Breckenridge St



Photo #6: S 4th St looking north at W Kentucky St

2018 Waste Tire Market Development
Rubber-Modified Asphalt Grant Application
Photo Log



Photo #7: S 4th St looking south at W Kentucky St

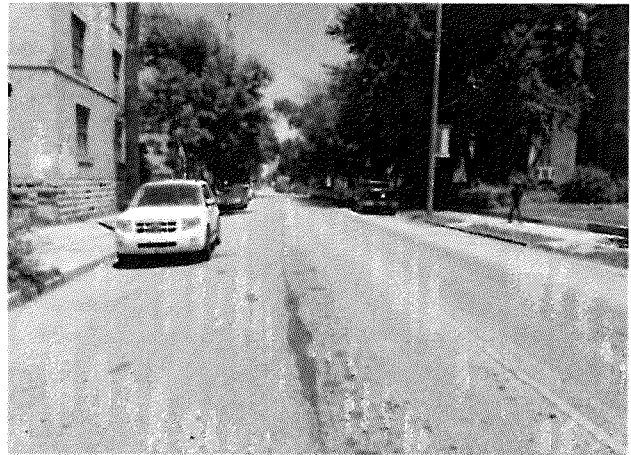


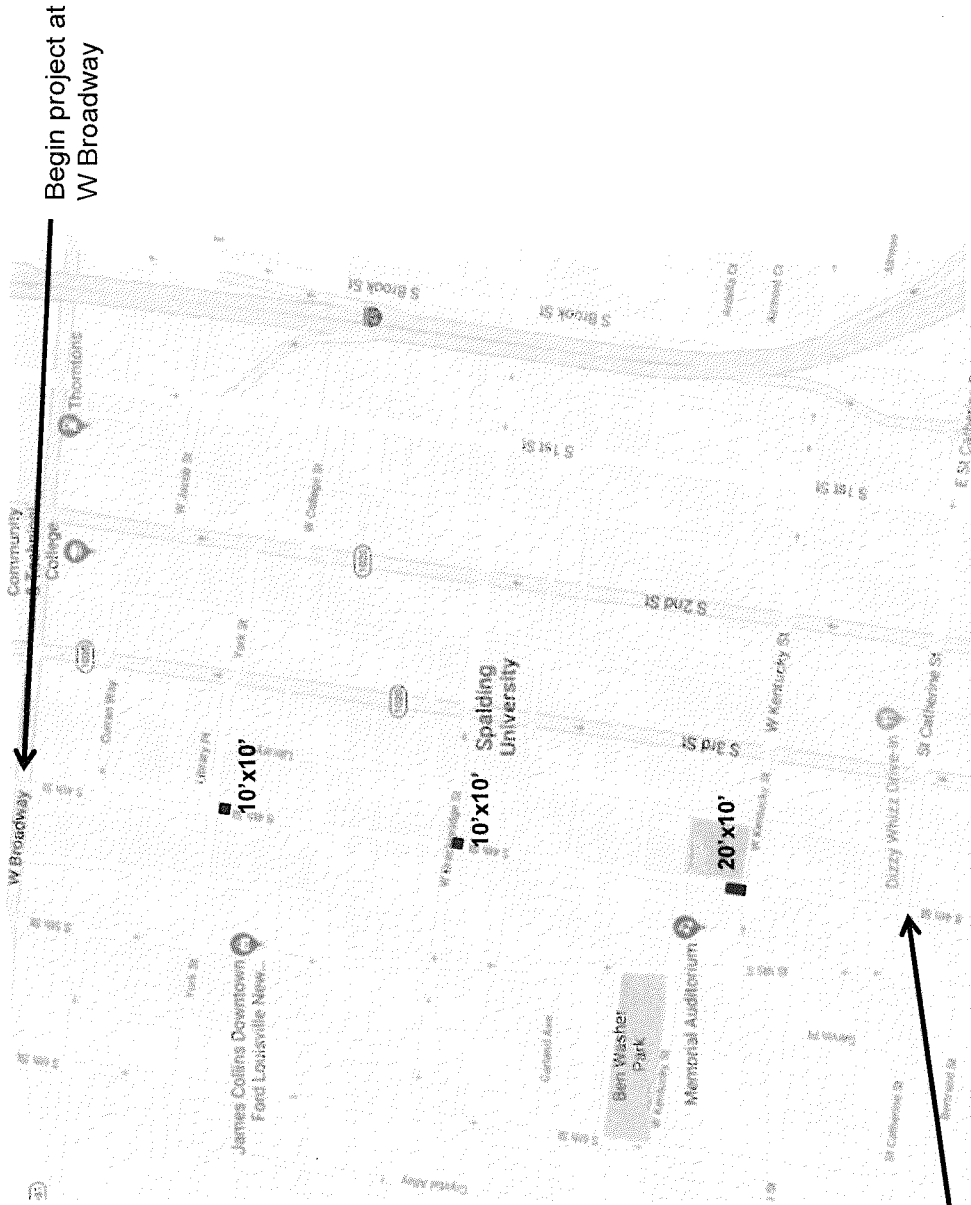
Photo #8: S 4th St looking north at St Catherine St

LEGEND


Approximate location of possible base failure



Note: S 4th St has various utility trenches which show cracking at joint that could be base failures. Cores will be obtained prior to work beginning to help identify base failure locations



Project Manager:	XXX
Drawn by:	XXX
Checked by:	XXX
Approved by:	XXX
Project No.:	XXXX
Scale:	N.T.S.
File Name:	
Date:	6/5/2018



444 S. 5th Street, 4th Floor
Louisville, Kentucky 40202
PH: (502) 574-3883 FAX: (502) 574-4129

ANTICIPATED BASE FAILURE REPAIRS
S 4th St
Louisville, KY



Louisville Metro classifies S 4th St as a minor arterial that primarily withstands lightweight passenger vehicles with occasional buses, and garbage and delivery trucks. KYTC has performed two daily traffic counts on S 4th St along the segment from W Broadway to just south of St Catherine St. The daily traffic counts along this section were found to be 5,100 and 4,600 in 2014 and 2015, respectively (Information available on KIPDA website).

Figure 2 shows our current plan for developing test sections for both rubber modified asphalt and regular hot mix asphalt. Let it be known that Louisville Metro is planning to perform additional paving along S 4th St from St Catherine St to Central Ave and will meet the grant requirement in paving an equal or exceeding the quantities of rubber-modified asphalt with regular hot mix asphalt.

In 2017 Louisville Metro was awarded the rubber-modified asphalt grant from KYTC and has met the grant conditions to date. Louisville Metro's contractors primarily perform thin hot mix asphalt overlays (1.5 inch mill and overlay) when paving. Prior to milling and paving, the roadway is inspected to identify base failures which are then addressed via 4 options currently available in our annual contract. If additional areas are discovered when milling, Louisville Metro will address those as well prior to repaving. Figure 4 shows anticipated structural base failures which will be removed and replaced with a stable base prior to repaving. Louisville Metro plans to core drill several areas within this stretch of roadway to help determine the extent of structure base repair needed, therefore, the areas shown on Figure 4 may change.

Shown Below is current data we have on the section of S 4th St to be repaved.

Road Name	From	To	2015 PCI	Average Width	Area	Length
S 4TH ST	W BROADWAY	YORK ST	65	38	25,693	676
S 4TH ST	YORK ST	W BRECKINRIDGE ST	38	38	32,835	864
S 4TH ST	W BRECKINRIDGE ST	BASEBALL ALY	65	38	32,358	851
S 4TH ST	BASEBALL ALY	W KENTUCKY ST	70	38	9,027	237
S 4TH ST	W KENTUCKY ST	W ST CATHERINE ST	49	38	21,216	558

Attachment 2



Louisville Metro Plans to inform and educate the surrounding community by the following:

- 1) Louisville Metro Public Works sends out a weekly news letter called "The Works Week" which is sent to over a thousand different people across the county including elected officials. Elected officials then have the opportunity to send this news letter out along with their weekly letters to constituents.
- 2) Louisville Metro Public Works will advertise the project on social media by including the tangible benefits including potentially longer lasting asphalt, noise reduction, and recycling waste tires as part of this public information process. By clicking onto the link, we can direct them to further information that the cabinet has available.