



Michigan Department of Transportation

Transportation Economic Development Fund

Community Service Infrastructure Fund (Category B)  
Applicant Guide

Contents

TEDF Category B: An Overview ..... 2

Program Parameters ..... 3

    Eligible Projects ..... 3

    Grant and Match Requirements ..... 3

    Participating / Non-Participating Costs ..... 3

    Timing / Schedule ..... 4

    Implementation ..... 4

    Competitiveness..... 4

Completing the Application Form ..... 5

    Section 1: Applicant Information ..... 5

    Section 2: Project Information ..... 5

    Section 3: Project Funding ..... 6

    Section 4: Project Implementation ..... 6

Required Supporting Documentation ..... 6

Submitting the Application ..... 7

Appendix I. Resolution of Support Example ..... 8

Appendix II. Preventative Maintenance Guide ..... 9

    I. Approved Preventative Maintenance Treatments..... 9

    II. Bridge Preventative Maintenance..... 11

    III. Definitions of Preventative Maintenance Treatments ..... 11

## TEDF Category B: An Overview

The Community Service Infrastructure Fund (CSIF), also known as the TEDF Category B program, was designed as a stop gap measure to provide additional road funding to Michigan's smallest communities, particularly those with limited ability to fund road improvement projects.

Eligible applicants include villages and small cities with a population of 10,000 or less, per the 2020 census. A list of eligible communities can be found [here](#).

Eligible projects include reconstruction, replacement, rehabilitation, or capital preventative maintenance of city or village streets and stormwater improvements needed for the road project. Only costs directly associated with the roadway construction and associated stormwater improvements are eligible for funding or match credit. Preliminary engineering (design), right-of-way acquisition, construction engineering (oversight), water/sanitary sewer, and sidewalk are not eligible costs.

The maximum grant amount is 50% of the eligible costs, up to \$250,000. The remainder of the project costs will be provided by the local agency.

Each application is reviewed and independently scored based upon the following set of criteria:

- The extent to which an agency has the ability to fund road projects, based on 2023 real/personal property value proportional to population.
- Projects on local roads, as they have fewer eligible funding sources.
- Projects paired with other infrastructure projects, as to encourage efficiency and coordination.
- Projects done together with another agency's project, as to encourage lower pricing and general efficiency.
- Preventative maintenance projects, as to encourage better asset management practices.
- NOTE: Points are reduced for agencies that received a grant from the program in the past.

Please contact your region's grant coordinator with any questions, available [here](#).

## Program Parameters

### Eligible Projects

Eligible projects include reconstruction, replacement, rehabilitation, or capital preventative maintenance of city or village streets and stormwater improvements needed for the road project. New construction or routine maintenance such as filling potholes, mowing, plowing, etc. are not permitted with Category B funding.

As this is a competitive grant program, the grant award is based on the scope of work and estimates included in the grant application. The scope of work nor the grant request/award can be changed from what was requested in the application. Change orders may be approved for unforeseen issues that may arise during construction, but requires discussing the issue with the Grant Coordinator at the time the change order is needed. *We strongly encourage the local agency have assistance with the preparation of the scope of work and estimates.*

### Grant and Match Requirements

The maximum grant amount is the lesser of 50% of the eligible and participating costs, up to \$250,000. The remainder of the project costs will be provided by the local agency. To receive the entire \$250,000, the eligible and participating work would have to equal or exceed \$500,000.

Category B grants are granted as a percentage of the total eligible costs, with a maximum grant amount. If bids come back higher than what was anticipated on the grant application, the approved project and grant amount /percentage remains in place, and the local agency would be responsible for any cost overages resulting from the higher bids. As this is a competitive grant program, there is not an opportunity to reduce the scope or request additional funds.

If the bids come in lower than anticipated, the approved percentage will be used to calculate the grant amount, and any savings realized will be used for future grants. There is no opportunity to increase the project scope of work to use remaining grant funds.

### Participating / Non-Participating Costs

Only costs directly associated with the roadway improvements or ancillary stormwater improvements listed above are considered participating for funding or match credit. Only “cash” match toward the actual construction costs are eligible to be used toward the match requirements. As with all TEDF projects, addition of Americans with Disability Act facilities are eligible costs.

Preliminary engineering (design), right-of-way acquisition, and construction engineering (project oversight), utility improvements, sidewalks, etc. are considered non-participating costs and are not eligible costs for Category B funding and should not be included as match calculation.

Items such as sidewalks, streetlights, sanitary sewer and watermains are considered non-participating and are not eligible costs and should not be included as match calculation unless they would be directly impacted by the proposed road project.

Please note that any work started prior to a grant award, a state-local agency agreement in place, and a Notice to Proceed from the Office of Economic Development is issued, will not be eligible for funding.

### Timing / Schedule

Complete applications, including all required documentation, for the FY 2025 Category B program are due by 5pm on Wednesday, June 12<sup>th</sup>. Dependent on the volume of applications (there are 441 eligible agencies), we anticipate award letters by mid-September 2024. *Awards are made contingent on continued appropriations as of October 1, 2024.*

After grant award and announcement, work cannot commence until the state-local agency agreement in place, the competitive bid process has been completed and approved, and a Notice to Proceed from the Office of Economic Development is issued.

It is our expectation that the 2025 grant related projects will be completed by the end of the 2025 construction season.

### Implementation

A direct grant, where possible, is the preferred method of project implementation for Category B grants . Exceptions to this will be grants awarded to agencies that are using Federal-aid or other TEDF funding as match, or if there are any issues related to the agency's capacity to implement the proposed project without MDOT oversight. Implementation method will be determined after the time of grant award during the coordination meeting between MDOT and the local agency.

With direct grants, the local agency is required to maintain the official project file and ensure compliance with all local and state laws/rules. *Except for the acquisition of ROW, Federal regulations do not apply.*

The local agency is required to use a competitive bid process, including publishing the bid opportunity in a regionally significant paper and providing a three-week bid window. Force account work is not eligible for Category B projects.

### Competitiveness

A local agency will receive extra consideration for preventative maintenance related applications. Projects that are designed to extend the life of the existing roadway are considered a better value and can increase the amount of work the agency can perform for the same amount of funding. This does not preclude applications that are not Preventative

Maintenance in nature. For which type of maintenance qualifies as Preventative Maintenance, see [Appendix I - Preventative Maintenance Guide](#) below.

Extra consideration is also made for applications for roads that are not eligible for Federal Highway Administration (FHWA) funding or Category D funding, multi-jurisdictional projects, and road projects that are paired with utility improvements such as water and sanitary sewer. Please note that stormwater management is a participating activity, and funded as part of Category B, and is not considered infrastructure pairing for purposes of application review and/or scoring.

## Completing the Application Form

### Section 1: Applicant Information

Please provide the relevant contact information for the primary contact person, as well as an alternate contact person. The primary contact should be the same person designated on the resolution of support and should be a municipal employee or official who is available for us to direct questions, discuss implementation, or address any other concern. If there is no such person available, you may designate a consultant or similar representative. Please note, this person will be our primary point of contact.

Please also indicate the elected Michigan representative and senator from the agency's district.

### Section 2: Project Information

Please provide the relevant information about the road project. Identify the street name and nearest cross streets for the requested project, the roadway classification, its PASER rating, as well as the daily average traffic count.

Describe the project for which funds are requested, including starting and ending points, linear feet of project, and type and technical specs of treatment, including depth of mill/fill, depth of overlay, etc. and whether the work is considered preventative maintenance. Please include the PASER rating and traffic counts if known; the inclusion of this information will not affect the score or viability of the application, and a local agency is not required to contract for these services for the purposes of this application. If the requested work is combined with other infrastructure work, or work performed by another agency, please describe. Indicate if there are any railroad crossings or bridge work within the project limits for each segment. Specify the cost of participating construction for the relevant section.

Identify whether the local agency requires any more right-of-way. If this is the case, briefly describe the situation. Please answer yes if a permanent acquisition is needed or if just a temporary easement or grading permit is required. *Note: If your application is successful, and property is needed, your agency will be required to follow the federal Uniform Relocation*

*Assistance and Real Property Acquisition Act.* Repeat these steps for up to five roadways or treatments.

### Section 3: Project Funding

The next section focuses on project funding. First, indicate whether the project will be paired with *non-participating* infrastructure work. This may include sewer, water main, electric, among others. Briefly describe the nature of the work, provide an estimate of the cost, and whether the local agency has committed the funds to carry out the infrastructure work. Please note, if the applicant is including stormwater work in the project and is using grant funds towards it, this is not infrastructure pairing. Infrastructure pairing is when the local agency is using its own funds to conduct improvements to infrastructure.

Next, indicate whether the local agency is applying for any other funding outside of Category B funding for the road projects listed in Section 2. This could be other local, state, or federal funds. If so, identify the providing agency, the amount, and year in which the funds will be issued.

Question 3 provides project cost calculations, MDOT grant fund requests, and match requirements. This section is auto-populated using the information provided by the application in sections 2 and 3 for project costs and non-participating costs.

Please note that if the project total comes in higher or lower than anticipated in this application, the final grant award will be the lessor of the grant request amount (3.3.d), and the match percentage from (3.3.e). The grant amount should match the grant amount requested in the resolution.

### Section 4: Project Implementation

Please provide a start date for the proposed project, keeping in mind that this program is for 2025 construction. Indicate whether the proposed project will be paired with other roadwork by another agency; if this is the case, please provide the name of the other agency. In question 3, indicate whether the local agency will oversee the implementation of the grant. There are often consultant engineering firms that oversee the execution of Category B grants. If this is the case, identify who will oversee this process.

## Required Supporting Documentation

The applicant agency *must* submit a completed **resolution of support**. This should take the form of official action by the local governing body. The resolution must contain the street name(s) for which the agency is requesting Category B funding, the total amount being requested, and the amount of matching funds to be committed by the agency for the project. In addition, the

resolution should include the name of the individual designated by the governmental body to speak and act on behalf of the body. See Appendix I for an example below.

Please include a **map** of the city or village with the application showing the location of each street for which the application corresponds. For larger communities where streets or their names are not legible due to their scale, please provide an additional map or inset at a scale where locations are readable.

Please include an itemized engineer's estimate of the **project cost**. Estimates for projects that also include non-road related work (i.e., water main replacement, sidewalks, etc.) will need to have components eligible for funding separated from those that are not eligible for funding. Estimates should include traffic control and mobilization. Estimates can include contingency, but not more than 10%, and it is preferable that contingency is included in each line item, rather than one line item covering all participating/grant eligible components.

In addition, please provide at least two **photos** for each street for which the application corresponds. The photos should be labeled with the location/street name and the direction of the image. Additional photos should be included for longer roadway segments. Digital photographs are preferred.

Please attach these documents with the completed application form when submitting the application. This is a highly competitive grant program, and applications submitted without these documents are "incomplete" and will not be considered for funding.

## Submitting the Application

After completing the application form, please prepare the required supporting documentation. Attach the completed form and the supporting documents and send via email to [MDOT-OED-CategoryB@michigan.gov](mailto:MDOT-OED-CategoryB@michigan.gov). **Complete applications, including all required documentation, for the FY 2025 Category B program are due by 5pm on Wednesday, June 12<sup>th</sup>.**

It is important to ensure that the application packet is sent to the correct email address. Confirmation emails are not typically sent by the OED, and it may be some time before the applicant will hear anything back about their application. As application reviews are being conducted, however, the OED may reach out to the applicant and ask for clarification or correction of some material.

# Appendix



## Appendix I. Resolution of Support Example

**CITY OF [name]**  
**RESOLUTION NO. [number]**

A RESOLUTION TO ESTABLISH A REQUEST FOR FUNDING, DESIGNATE AN AGENT, ATTEST TO THE EXISTENCE OF FUNDS AND COMMIT IT TO COMMIT TO IMPLEMENTING A MAINTENANCE PROGRAM FOR [type of improvement, e.g., *resurfacing of State Road*] FUNDED BY THE TRANSPORTATION ECONOMIC DEVELOPMENT FUND CATEGORY B PROGRAM.

Minutes of a regular meeting of the [name] of the City of [name], [name] County, Michigan, held in the [name], [address], in said City, on [date] at [time].

PRESENT: COMMISSIONERS: [Names]

ABSENT: COMMISSIONERS: [Names]

The following preamble and resolution were offered by Commissioner [Name] and supported by Commissioner [Name].

WHEREAS, the City of [name] is applying for [amount] in funding through MDOT from the Transportation Economic Development Category B Program to construct [type of improvements] on [street or route name].

WHEREAS, MDOT requires a formal commitment from the public agency that will be receiving these funds and will be implementing and maintaining these infrastructure projects.

NOW, THEREFORE, BE IT RESOLVED THAT, the City has authorized [name], [title], to act as agent on behalf of the City to request Transportation Economic Development Fund Category B Program funding, to act as the applicant's agent during the project development, and to sign a project agreement upon receipt of a funding award.

BE IT FURTHER RESOLVED THAT, the City attests to the existence of, and commits to, providing at least [match amount] toward the construction costs of the project(s), and all costs for design, permit fees, administration costs, and cost overruns.

BE IT FURTHER RESOLVED THAT, the City commits to owning operating, funding and implementing a maintenance program over the design life of the facilities constructed with Transportation Economic Development Fund Category B Program funding.

PRESENT: COMMISSIONERS: [Names]

NAYS: COMMISSIONERS: [Names]

ABSENT: COMMISSIONERS: [Names]

RESOLUTION DECLARED ADOPTED.

[name]

[title]

## CERTIFICATION

The forgoing resolution was certified at a regular meeting of the [name] of the City of [name] held on [date].

[signature]

[title]

## Appendix II. Preventative Maintenance Guide

### I. Approved Preventative Maintenance Treatments

Fix Type	Life Extension (in years) *	Life Extension (in years)	Life Extension (in years)	PASER Rating	ADA Required (Yes/No)
	Flexible	Composite	Rigid		
HMA Crack Treatment	1-3	1-3	N/A	6-7	N
Overband Crack Filling	1-2	1-2	N/A	6-7	N
One Course Non-Structural HMA Overlay	5-7	4-7	N/A	4-5*****	Y
Mill and One Course Non-Structural HMA Overlay	5-7	4-7	N/A	3-5	Y
Single Course Chip Seal	3-6	N/A	N/A	5-7 <sup>1</sup>	N
Double Chip Seal	4-7	3-6	N/A	5-7 <sup>1</sup>	Y
Single Course Micro-Surface	3-5	**	N/A	5-6	Y
Multiple Course Micro-Surface	4-6	**	N/A	4-6*****	Y
Ultra-Thin HMA Overlay	3-6	3-6	N/A	4-6*****	Y
Paver Placed Surface Seal	4-6	**	N/A	5-7	Y
Full Depth Concrete Repair	N/A	N/A	3-10	4-5 ***	N <sup>2</sup>
Concrete Joint Resealing	N/A	N/A	1-3	5-8	N
Concrete Spall Repair	N/A	N/A	1-3	5-7	N
Concrete Crack Sealing	N/A	N/A	1-3	4-7	N
Diamond Grinding	N/A	N/A	3-5	4-6	N
Dowel Bar Retrofit	N/A	N/A	2-3	3-5 ***	N
Longitudinal HMA Wedge/Scratch Coat with Surface Treatment	3-7	N/A	N/A	3-5*****	Y
Flexible Patching	**	**	N/A	N/A	N
Mastic Joint Repair	1-3	1-3	N/A	4-7	N
Cape Seal	4-7	4-7	N/A	4-7	Y
Flexible Interlayer "A"	4-7	4-7	N/A	4-7	Y
Flexible Interlayer "B" (SAMI)	4-7	4-7	N/A	3-7	Y

Flexible Interlayer "C"	4-7	4-7	N/A	3-7	Y
Fiber Reinforced Flexible Membrane	4-7	4-7	N/A	3-7	N
Fog Seal	**	**	N/A	7-10	N
GSB 88	**	**	N/A	7-10	N
Mastic Surface Treatment	**	**	N/A	7-10	N
Scrub Seal	**	**	N/A	4-8	N

\* The time range is the expected life extending benefit given to the pavement, not the anticipated longevity of the treatment.

\*\* Data is not available to quantify the life extension.

\*\*\* The concrete slabs must be in fair to good condition.

\*\*\*\* Can be used on a pavement with a PASER rating equal to three when the sole reason for rating is rutting or severe raveling of the surface asphalt layer.

1. For PASER ratings of four or below; providing structural soundness exists, and that additional pre-treatment will be required; for example, wedging, bar seals, spot double chip seals, injection spray patching or other pre-treatments.
2. Full depth concrete repair or replacement that exceeds 50% of the paved area of any road intersection (defined as spring point to spring point) will require ADA compliance at that intersection.

## II. Bridge Preventative Maintenance

Preventative Maintenance activities are eligible under the Local Bridge Program.

Examples of preventative maintenance include:

- Hot mix asphalt (HMA) overlay with waterproofing membrane
- Epoxy deck overlay (concrete)
- Shallow deck overlay (removing and replacing concrete surface above the top mat of steel reinforcement)
- Deep deck overlay (removing and replacing concrete surface below the top mat of steel reinforcement)
- Painting only (full, zone, or spot painting)
- Pin and hanger replacement
- Slope paving repair
- Joint replacement and repair
- Drainage system repair (bridge deck drains and bridge approach downspouts)
- Scour countermeasures
- Concrete crack sealing
- Concrete patching and repair
- Approach pavement relief joint installation
- Temporary supports
- Expansion or construction joint repair
- Guard rail beam retrofit or installation
- Substructure repairs

## III. Definitions of Preventative Maintenance Treatments

### **HMA Crack Treatment and Overband Crack Filling**

This is a generalized treatment category including crack sealing, crack filling, and crack repair. This crack seal treatment is used on all types of cracks. It involves using a hot air lance or compressed air to blow out the debris in the crack, then filling with a sealant. This class of treatments is intended to seal the cracks from water infiltration and incompressible material entering the pavement system.

### **Non-Structural HMA Overlays:**

Non-structural overlays are considered to have an application thickness of 1.5 inches or less of hot mix asphalt HMA material; however, in certain cases the use of 2-inch overlays may be approved. Pre-approved cases include the use of 2-inch overlays for crown correction, the use of superpave mixes that require 2-inch lifts, the use of a scratch course prior to a 1.5-inch overlay in areas where there is a concern with crack sealing materials, and where it is necessary to mill 2 inches to address distress (such as rutting). Use of 2-inch overlays is still the exception to the

rule and the use of 2 inches of HMA in the preventive maintenance program for any reason other than the pre-approved reasons listed above will require approval from the MDOT Local Agency Staff Engineer, the MDOT Local Agency Engineer, and the Development Services Division Administrator. Approval will be on a case-by-case basis. Preventive maintenance projects should not be applied to a roadway that has a significant level of distress that should be addressed by a 3R or reconstruction type project.

#### **Longitudinal HMA Wedge/Scratch Coat with Surface Treatment:**

Longitudinal HMA wedge/scratch coat with surface treatment consists of a paver-placed HMA material to correct the cross section of the roadway often done on lower volume roads in combination with a chip seal but can also be used in combination with a micro-surface, ultra-thin overlay, and conventional overlay. This is not to be used in small, isolated areas such as a pothole repair. This is to be used for the majority of the length of the project (using engineering judgment) so that the proper increase in ride quality can be achieved.

#### **Chip Seal**

A chip seal is the application of an asphalt emulsion with a cover aggregate. A chip seal will seal and/or retard the oxidation of an existing pavement surface, improve skid resistance of the pavement surface; seal fine surface cracks in the pavement, thus reducing the intrusion of water into the pavement structure; and retard the raveling of aggregate from a weathered pavement surface. Chip seals may be constructed using a single or multiple layers of asphalt emulsion and aggregate cover. Chip seals may be applied in conjunction with crack sealing.

#### **Micro-Surface**

Micro-surfacing is a mixture of polymer modified asphalt emulsion, mineral aggregate, mineral filler, water, and other additives placed on a paved surface. A single course micro-surfacing will retard oxidation and improve skid resistance in the pavement surface. A multiple course micro-surfacing is used to correct certain pavement surface deficiencies including severe rutting, minor surface profile irregularities, polished aggregate or low skid resistance and light to moderate raveling. Micro-surfacing is typically used on flexible or composite pavements and can perform under all traffic volumes.

#### **Ultra-Thin HMA Overlay**

Ultra-Thin HMA Overlay is a dense graded bituminous mixture limited to an application rate of 72lbs/Syd, and a maximum average thickness of 0.75 inches which is applied to retard oxidation and improve skid resistance in the pavement surface.

#### **Full Depth Concrete Repair**

The work consists of complete removal and replacement of the concrete pavement at the deteriorated joint or open crack. The new concrete repair should include load transfer (dowel bars), pavement reinforcement if the pavement is a joint reinforce concrete pavement, contraction and/or expansion joints with joint seals. Repairs adjacent to ADA ramps will be reviewed on a case-by-case basis to determine if the fix is an “alteration” or “maintenance” with regard to ADA compliance.

### **Concrete Joint Resealing**

The purpose of resealing the concrete pavement joints is to prevent water and incompressibles from entering the pavement structure, thus slowing the rate of deterioration of the concrete pavement. Concrete joint resealing includes the removal of the existing joint seals and resealing the transverse and longitudinal joint with preformed neoprene, silicones, or low-modulus hot-poured rubber.

### **Concrete Spall Repair**

Spall repair is done to remove distress from the pavement and to increase the life of the repair versus typical reactive methods that use temporary asphaltic filler or cover materials. The work repairs spalled concrete by removing all unsound concrete, cleaning the area, and placing a filler material consisting of a fast-set mortar or a rapid setting polymer concrete. Spalling may occur along transverse or longitudinal joints or cracks or be located somewhere on the pavement surface. Filler materials are typically pre-packaged and are placed according to recommendations from the supplier.

### **Concrete Crack Sealing**

The purpose of sealing the cracks in the concrete pavement is to reduce the water and incompressible from entering the pavement structure and thus slowing the deterioration rate of the pavement. This treatment can be used in conjunction with other treatments of rigid pavements such as joint resealing and minor spall repair and /or full depth concrete joint repair.

### **Diamond Grinding**

Diamond grinding is used to restore the surface longitudinal profile and crown of a concrete pavement that provides an improved ride quality. Benefits from diamond grinding include the removal of joint and crack faults, the removal of wheel ruts caused by tire wear, the restoration of transverse drainage, and the improvement of skid resistance. Often other repairs should be performed prior to diamond grinding.

### **Dowel Bar Retrofit**

A dowel bar retrofit treatment restores the effective load transfer at faulted joints and cracks, significantly reduces the recurrence of faulting, and increases the structural capacity of the pavement. Dowel bar retrofit is an operation in which slots are cut into the concrete pavement across faulted joints and cracks, and dowel bars are placed in the slots to restore the load transfer. The work consists of five operations:

- Cutting the slots
- Preparing the slots
- Placing the dowel bars
- Backfilling the slots
- Opening the pavement to traffic

### **Paver Placed Surface Seal**

A special paver places a polymer modified asphalt emulsion followed immediately by a gap-graded, ultra-thin HMA surface course. A paver placed surface seal is a non-structural HMA overlay in combination with a bonding/sealing polymer modified asphalt emulsion. It assists in sealing the existing pavement surface to reduce the intrusion of water into the pavement structure; improve friction; slow the rate of pavement deterioration; correct minor pavement surface deficiencies; and improve the ride, noise, and skid qualities of the pavement.

### **Flexible Patching**

Flexible patching is a process that can be used for repairing alligator cracking, cupped joints, and compound cracking. Flexible patching can be used on asphalt or concrete surfaces. Cracks are cleaned and dried using compressed air or a heat lance. This ensures that sealant properly adheres to the pavement. The sealant is applied through a wand or gravity and is hand squeegeed to ensure proper coverage of the affected area. An approximately 1/8-inch base of sealant is ideal to hold the cover material in place. In some cases, an aggregate cover material is placed on top of the sealant with other products to assist the aggregate as part of the mix. This improves not only the durability of the treatment, but also makes for a smoother riding surface. Allow for the flexible patching to fully cure before opening to traffic.

### **Mastic Joint Repair**

Mastic Joint Repair involves removing old expansion joint material in concrete roadways and applying a mastic joint between the slabs. Depending on the product used, it may need to be sanded prior to traffic resuming.

### **Fog Seal**

Fog Seal is the process of using a pressure distributor to apply an asphalt emulsion typically over a chip sealed road. The distributor is required to have a computerized application rate. This will ensure that the fog seal is applied properly to coat the void areas of the chip seal. This will help with stone retention in a chip seal as well as keep the water from getting underneath the chip seal. Fog Seal is also an effective method to provide asphalt binders with UV protection and the degradation caused by UV exposure. Alternatively, Fog Seal may be a candidate for protecting shoulder pavements or other HMA pavements (i.e., non-chip seal surface treatments) as long as skid resistance is not diminished or creates a safety hazard as a result of the fog seal application. Traffic should be kept off the freshly applied fog seal until it has fully cured.

### **GSB-88**

GSB-88 is a process that is applied similarly to that of a fog seal. GSB-88 is used early in the life cycle of a road. Product is best used on roads that have little deterioration occurring. The product has gilsonite mixed into the product which is a naturally made asphalt. The asphaltenes, maltenes, and light oils penetrate the existing asphalt and introduce gilsonite to the pavement. This helps rejuvenate the asphalt characteristics that were initially lost due to UV rays, oxidization, and other natural elements. The gilsonite sets in pores and holds the asphalt fines in the asphalt matrix. GSB-88 is sprayed with a computerized distributor. The distributor may also have a sand spreading mechanism on the back to spread sand to help with traction and decrease cure times. Traffic should be kept off the product until it has had time to fully cure.

### **Mastic Surface Treatment:**

This process seeks to improve micro-texture on a variety of Asphalt Surfaces or by locking down loose aggregate and eliminating dust associated with chip seal Surfaces. It is a mixture of polymer modified asphalt emulsion, quality “fine” aggregate, dark color enhancers, recycled materials and catalysts. This treatment is designed to protect your investment from UV damage, maintain frictional characteristics, minimize the costs of future maintenance treatments and return the roadways to traffic more quickly.

### **Fiber Reinforced Flexible Membrane Surface Treatment**

This treatment is a crack inhibiting, waterproofing and sealing membrane. Fiberized Reinforced Surface treatment can be utilized to address two distinct distress application needs. **Type A** is applied as a superior wearing course for stand-alone surface treatment applications. This process consists of a combination of polymer-modified asphalt emulsion, chopped fiberglass strands and quality crushed aggregate. The benefit of the fiberglass is the superior tensile strength which absorbs and bridges pavement distresses, as well as helping to reduce reflective cracking.

### **Cape Seal**

A Cape seal is a two layered surface treatment in which the first layer is comprised of a chip seal followed by a second layer of Micro surface. Alternately, some situations may require or allow for reversal of the first and second layers. A cape seal helps to retard reflective cracking by combining a rather flexible seal to the original pavement, provide a hard-frictional riding surface, and to repair minor pavement profile deficiencies. It can be a cost-effective method for treatment of ‘higher’ stressed pavement surfaces that would not be possible with a single surface of chip seal or micro surface treatment alone. It can be used on gravel surfaces to construct a paved roadway built is typically used on flexible or composite pavements and can perform under all traffic volumes.

### **Flexible Interlayers**

Similar to Cape Seal philosophy several pavement preservation tools are used as flexible interlayers under new hot mix paving layer(s). Flexible interlayers are frequently used with mill and fill applications to help retard or redirect vertical reflective cracking horizontally to increase the service life of the new pavement and/or to defer requirement for crack sealing.

#### **Flexible Interlayer “A” (Single Chip Seal)**

A single layer of chip seal using commonly approved asphalt emulsion, polymer modified, or non-polymer modified, can be placed under a Micro Surfacing or Hot Mix Asphalt surface. This treatment is a crack inhibiting, waterproofing and sealing membrane. The single chip seal application helps extend the life of the subsequent overlay by delaying reflective cracking or “bottom up” cracking by dissipating crack propagation energy and deflecting most of the “top down” pavement strain from vehicle loading. It is typically used on highly distressed milled or unmilled surfaces and can perform under all traffic volumes. It may not perform as well as Flexible Interlayer “B” (SAMI) dependent on the polymer concentration in the emulsion.

#### **Flexible Interlayer “B” (SAMI (Stress Absorbing Membrane Interlayer))**

A combination of highly polymerized asphalt emulsion and quality crushed aggregate. Installed much like a chip seal. This treatment is a crack inhibiting, waterproofing and sealing membrane. An excellent bonding agent that acts as a flexible waterproofing membrane installed prior to either a Micro Surfacing or Hot Mix Asphalt. **SAMI** helps extend the life of the subsequent overlay by delaying reflective cracking or “bottom up” cracking by dissipating crack propagation energy and deflecting most of the “top down” pavement strain from vehicle loading. It is typically used on highly distressed milled or unmilled surfaces and can perform under all traffic volumes.



### **Flexible Interlayer “C” (Fiber Reinforced Flexible Membrane Interlayer)**

This treatment is a crack inhibiting, waterproofing and sealing membrane. Fiberized Type B is a Stress Absorbing Membrane Interlayer (SAMI) used to reduce reflective cracking in pavement system overlays. This process consists of a combination of polymer-modified asphalt emulsion, chopped fiberglass strands and quality crushed aggregate. The benefit of the fiberglass is the superior tensile strength which absorbs and bridges pavement distresses, as well as helping to reduce reflective cracking better than Flexible Interlayers A or B.

### **Scrub Seal**

Scrub Seal is the application of a chip surface placed over polymer modified asphalt rejuvenating emulsion surface sealer. The asphalt emulsion surface sealer is a polymer modified rejuvenating emulsion that is scrubbed with a scrub broom device immediately following application of the emulsion by a distributor. The scrub broom is used to force emulsion sealer into the existing surface and to distribute the rejuvenating emulsion sealer over variable road surface contours. Immediately after scrubbing the polymer modified asphalt rejuvenating emulsion, it is covered with a surface aggregate.

### **Longitudinal Joint Repair**

A process in which severely opened HMA or concrete joints are sealed by a chosen pre-treatment and/or then covered with a small width micro surfacing treatment to maintain a smooth ride quality while sealing the opened longitudinal joint and preventing further damage to the longitudinal joint from traffic and weather.