GUIDELINES FOR
THE VILLAGE OF LINCOLN, MI
(AKA: Local Agency)
PAVEMENT WARRANTY PROGRAM

Adopted by Resolution on 6/3/2019

By
CRA Engineering Committee
Local Agency Pavement Warranty Task Force

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TABLE OF CONTENTS

PREFACE- Intent of the Local Agency Warranty Program

The Legislature (P.A. 175 of 2015) requires each local road agency to adopt a Local Pavement Warranty Program acceptable to the Michigan Department of Transportation. Warranties have the potential to improve the quality of road projects, benefitting the drivers, taxpayers and road agencies of Michigan

The intent of the Local Agency Pavement Warranty Program is to provide a warranty program that all local agencies can use for all hot mix asphalt and plain jointed concrete paving projects on public roads and streets. This pavement warranty program was created by the Local Agency Pavement Warranty Task Force, to establish a common pavement warranty program for all local agencies in Michigan. The goals of this Local Agency Pavement Warranty program is to standardize the review, to provide oversight of pavement warranty projects, and to make this program more transparent and uniform for private sector contractors.

This Local Agency Pavement Warranty Program is available for all local road agencies if they choose to use it. Local road agencies vary dramatically in size and sophistication; therefore the Local Road Warranty Task Force developed a warranty program to address the capabilities of the rural, the mid-sized urban and the large urban agencies. This approach provides a warranty program that meets the intent of Public Act 175 of 2015 (MCL 247.662 and 247.663), and provides all local road agencies with a pavement warranty program that provides value to the public.

The Local Road Warranty Task Force recognizes there may be substantial benefits and public confidence resulting from a comprehensive pavement warranty program. However, the existing pavement structure, drainage and planned improvements for each project will need to be evaluated on an individual basis to critically assess a justification or basis for a pavement warranty. Road agencies should anticipate increased project costs related to higher bid prices and costs for the warranty administration such as: pavement monitoring, defect documentation, official notifications, joint field inspections; defect remediation and dispute resolution.

The intent of this GUIDELINES FOR LOCAL AGENCY PAVEMENT WARRANTY PROGRAM, is to provide an overview and guidance on implementing a pavement warranty project. This guideline is intended for local agency use and it not intended to be a contract document.

GUIDELINES FOR LOCAL AGENCY PAVEMENT WARRANTY PROGRAM

Pavement Warranty Reporting and General Warranty Project Selection

Acceding to PA 175 of 2015, all local road agencies must submit an annual report to the state for all projects where the pavement-related bid items exceeded $ 2 million, regardless of whether or not the agency included a pavement warranty on the project. Each local road agency must submit and maintain its records to comply with the reporting requirements included in Appendix E.

The Task Force determined that the Legislature's intent for local pavement warranties is to provide assurances to elected officials and taxpayers in the use of the new funds arriving for road and bridge infrastructure. Assurances which include that local road projects would be held to a higher standard in the future.

At the same time, there are logical explanations why a local road agency may choose to not require a warranty such as unjustifiably higher costs for a warrantied project that may or may not be affordable to the community and may or may not be justified by the scope of the project; recognition of a limit to the contractor's ability to bond for every project; some projects are simple preservation or resurfacing over an existing imperfect road base wherein the contractor cannot control such pre-existing conditions; and many other engineering factors that indicate a pavement warranty would not serve the taxpayer's best interests. Whether or not a warranty is selected on a project with $2 million in pavement related items, this must be reported to the Legislature on an annual, state fiscal year basis.

The Legislature had the wisdom to specify that warranties would be left to the discretion and justification of the local road agency and its road engineering expertise. Agencies can waive a pavement warranty with a written justification. The agency's written justification identifies reasons such as project appropriateness, scope and type of project improvements, why this is in the best interest of the local agency, project cost justification, and effectiveness of the warranty provisions. It is highly recommended for all local road agencies with paving projects where the engineer's opinion of cost exceeds $ 1.8 million in pavement related items that serious consideration should be given to include the pavement warranty special provisions in the project proposal prior to advertisement.

The Task Force does not believe the Legislature intended every local new construction, reconstruction, rehabilitation, and overlay road project to be warranted, and thus included the $2 million threshold. Because pavement is the road component most likely to fail – and the area most aggravating to the motoring public – the Task Force believed the Local Pavement Warranty Program was intended to focus on pavement-related items. The Task Force has relied on customary and basic engineering principles in defining pavement-related items that are recommended for consideration of a warranty. As a result of the Local Agency Warranty Task Force believes the Michigan Legislature intended a local road agency to use its best judgment in requiring a warranty, consistent with the scope of the intended project and the ability to enforce it.

This Local Agency Pavement Warranty Program considers the vast array of project types and sizes. Local road agency projects often involve short stretches of pavement resurfacing to address a surface condition or safety concern. These types of projects are accomplished with very limited budgets, often with funding from non-MTF sources. In addition, often these types of projects do not address the subgrade, existing aggregate base or drainage systems; which all are major factors in determining the longevity of a pavement surface. If the road segment may be subjected to a significant amount of overloads (higher than average daily truck counts and/ or heavier than normal axle loading) during the anticipated warranty term, the road may not be a good candidate for pavement warranties. Therefore, the Local Agency Pavement Warranty Program is recommended for road segments designated as "all-season road" which are designed for year-round normal loading.

While the law indicates where possible a pavement warranty shall be secure when the paving project exceeds $2 million, the Task Force recognizes project bids are often 10 percent over the engineer's opinion of cost, and that a warranty requirement cannot be retroactively applied to a road project after the bids are opened. Thus, the Task Force has recommended the more conservative $1.8 million engineer's opinion of cost for pavement related items, as the point when the local agency decides if the warranty special provisions are included in the bid documents, rather than the $2 million stated in the law.

The Task Force believes the Michigan Legislature was speaking in the context of new Michigan Transportation Funds for roads, which are exclusively state revenue sources, when it included

the Local Agency Pavement Warranty Program alongside the new funding legislation in the 2015 Transportation Package. It also seems clear the Legislature was speaking not just to the new transportation funds, but also to the other road funds under its control, which includes the federal fund***s*** flowing through MDOT to the local road agencies.

The Local Agency Pavement Warranty Program also recognizes that if the only source of revenue for a local road agency paving or reconstruction projects is entirely locally derived revenue (non- Act 51 or Federal Funds) such as local general fund, millage revenue, special assessment districts or other locally raised revenue; then these projects will not be subject to the Local Agency Pavement Warranty Program reporting requirements.

It's important to note that this Local Agency Pavement Warranty Program may also be used by that local road agency on any paving project regardless if the $2 million dollar threshold for pavement related items has been reached or not. This approach ensures that Local Pavement Warranties can be used on any project with any funding source, including Michigan Transportation Funds, and can utilize the same requirements to provide greater understanding and transparency to contractors, stakeholders and the public.

Warranty Contract Process

For those construction projects advertised and let through the MDOT Local Agency Programs, the construction contract is between the prime contractor and MDOT. The prime contractors' surety company names MDOT as the obligee in the performance bond in the original contract. For Local Agency Pavement Warranty projects, an additional warranty contract and pavement warranty bond will be required prior to award, see Appendix D. The bid proposal shall include a contract consistent with the model contract and bond form shown in Appendix D. These documents will serve as the contract and warranty bond between the local road agency and the paving contractor for the warranty work. The warranty bond will be provided by the paving contractor in the name of the local road agency.

The MDOT Local Agency Agreement will reference the local road agency's responsibility to administer the warranty portion of the contract. Upon the acceptance of the construction work, the prime contractor's contract and performance bond with MDOT will be released and no longer in effect. At this point the warranty contract and warranty bond are triggered to begin the new contract for the warranted work during the warranty term.

The local road agency will be solely responsible for administering the warranty contract, inspection of warranted work during the warranty period, approving remediation work and seeking resolution through the warranty bond if the contractor is unresponsive in performing corrective work and declaring acceptance of all warranted / corrective work at the end of the warranty period.

General Guidelines of Local Road Agency Warranties

These General Guidelines are recommended for all local road agencies administering pavement warranties for public road and street construction contracts. The responsibility and authority for administering pavement warranties rest with the road owner and/or the local road agency that conducted the construction administration phase of the project.

To determine the pavement-related cost for a hot mixed asphalt pavement warranty project, the Local Agency is required to prepare an opinion of cost for all of the pavement-related items which include: the pavement, curb, shoulders, aggregate base, subbase and underdrain pay items. To determine the pavement-related cost for concrete pavements, the local road agency engineer is required to prepare an opinion of cost for all of the pavement-related items which include: pavement, curb, shoulders, joint sealing, dowel bars, load transfer devices, aggregate base, subbase and underdrain. If the total estimated cost of these pavement-related items exceeds $1.8 million in the opinion of the Engineer, the local road agency should review the existing pavement variables, stated in the "Pavement Warranty Reporting and General Warranty Project Selection" section of this document, to determine if the pavement warranty special provisions should be included in the bid documents.

The contractor is responsible for correcting defects attributable to elements within the contractor's control. Each warranty specification includes condition parameters and distress thresholds to provide a basis for evaluating the warranted work. Each distress parameter includes threshold limits that, if exceeded during the warranty period, would trigger notifying the contractor to participate in a joint field investigation. Depending on the outcome of the investigation the contractor may be required to prepare a remediation plan to correct distresses that are attributable to its materials and/or workmanship or there may be a call for further investigation. If the agency and the contractor cannot agree, either side can call for a Conflict Resolution Team to resolve the dispute as described in the Local Road Agency Special Provision for Hot Mix Asphalt and Concrete Pavement Warranty.

Once a remediation plan is agreed-to by the local road agency and the contractor, the corrective action shall be performed. The corrective actions and/or repairs shall be performed to correct deficiencies in the warranted work in order to achieve acceptance at the end of the warranty period. If the contractor fails to perform the remediation work within specified timeframes, the local road agency shall notify the surety company to perform the work. Further, if a defect is declared as an imminent safety problem by the agency, the local agency may complete the work and seek reimbursement from the contractor or submit a claim against the warranty bond.

All required corrective action must be performed by the contractor at no cost to the owner. The condition parameter thresholds and warranty requirements may vary depending on the date the specification was developed; type of warranty; and the application to the construction work. It is important, therefore, to refer to the specific warranty special provision in the contract when administering warranties.

The warranty administration phase should follow the documentation procedures outlined in Appendix A, B, C, D and E of these guidelines. The warranty administration can be performed by qualified local agency staff members or under a consultant service contract.

Warranty Documents

The Local Agency Pavement Warranty consists of the warranty contract and warranty bond as well as the appropriate special provisions:

- Local Road Agency Special Provision for Hot Mix Asphalt and Concrete Pavement Warranty
- Local Road Agency Special Provision for Warranty Work Requirements for Hot Mix Asphalt Pavement
- Local Road Agency Special Provision for Warranty Work Requirements for Jointed Plain Concrete Pavement
- Local Road Agency Special Provision for Pavement Warranty Information

The Local Road Agency Special Provision for Hot Mix Asphalt and Concrete Pavement Warranty establishes the common terms and definitions applied to pavement projects requiring a warranty. The Local Road Agency Special Provision for Warranty Work Requirements for Hot Mix Asphalt Pavements warrants the Local Road Agency against specific defects in HMA pavements. The Local Road Agency Special Provision for Warranty Work Requirements for Jointed Plain Concrete Pavement warrants the Local Road Agency against specific defects in concrete pavements. Local Road Agency Special Provision for Pavement Warranty Information provides the beginning and ending locations for warranted work and the applicable warranty work requirements special provision.

Under the Local Agency Pavement Warranty special provisions the Prime Contractor is responsible for correcting defects in the pavement caused by elements within the contractor's control (i.e., the materials supplied, the workmanship, etc.), during the warranty period. The Pavement Warranty Contract Provisions and Warranty Bond may pass through to subcontractors, and with this the responsibility to correct warranty defects, at the direction of the Prime Contractor and upon written notice to the agency prior to the start of the work.

The contractor assumes no responsibility for defects that are design related unless the paving contract is design-build. When a defect is attributable to the materials and/or workmanship and/or the design, the responsibility for correcting the defect (or defects) will be shared by the agency and the contractor. The contractor is responsible for the percentage of fault attributable to the workmanship and/or materials, and the agency is responsible for the percentage of fault attributable to the design. Note: The agency may elect to require the contractor to provide the pavement design(s) in the contract documents and specifications. In this case, the Contractor shall also be responsible for the percentage of fault attributable to the pavement design.

Warranty Process

The process flow charts as shown in Appendix A describe the steps involved in the warranty administration process. The warranty term begins with the acceptance of the warranted work during construction of the project. Warranty Administration involves periodic condition inspections of the mainline pavement areas throughout the warranty term; joint field inspections; documentation of findings, official notifications; joint determination of defects; initiation of corrective action, inspection & documentation of the corrective action taken, filing those inspection reports as necessary, and if necessary a conflict resolution process. If at any time, a safety issue or significant defect is observed or reported, prior to a scheduled inspection, an interim inspection will be initiated by the agency. If emergency repairs are determined to be necessary the agency can perform these repairs without altering the contractor's responsibilities under the warranty contract.

A joint field review between the local road agency and the warranty contractor may be held to verify and confirm of findings documented during the various inspections. MDOT should be included in any official communication dealing with the warranty if the construction project had MDOT oversight. The findings of the final inspection at the end of the warranty term are distributed to the owner, (and MDOT if construction had MDOT oversight), the warranty contractor and the Surety Company.

The appeal process, when needed, involves assembling a conflict resolution team (CRT) to conduct investigations as needed to determine distress cause & effect and establish

concurrence between the local agency and the warranty contractor regarding warranty compliance issues. More on the CRT can be found in the section j, Correction of Defects of the Local Road Agency Special Provision for Hot Mix Asphalt and Concrete Pavement Warranty.

The final step of the process, after the project or warranty work has been deemed acceptable is closing out the warranty project through notification of the contractor, the bonding company and Local agency's Finance and /or Administration Division.

Rights and Responsibilities of the Local Agency

The agency administering the project should inform the appropriate local road agency maintenance staff about sections of roadway incorporated in a warranty contract. The local road agency has the right to perform, or have performed, routine and emergency reactive maintenance during the warranty period. Major planned maintenance projects conducted during a warranty period need to be evaluated in terms of possible impact to the ongoing warranty coverage.

If corrective work is required to bring the project back into compliance with the requirements found in the warranty special provisions; the local agency in charge of the construction project must approve the schedule, materials and methods of construction repair. If the contractor is unable to comply with this provision, or fails to comply with it to the local agency's satisfaction, the local agency reserves the right to arrange for the work to be completed at the contractor's expense. If this action by the local agency is required, it will in no way relieve the contractor from meeting the warranty requirements stated in the project documents.

The rights and responsibilities are further detailed in Section e, Rights and Responsibilities of the Agency in the Local Agency Special Provision for Hot Mix Asphalt and Concrete Pavement Warranty.

Rights and Responsibilities of the Contractor

The contractor must provide a written work plan for any necessary corrective warranty work. A request for a work permit must be submitted through the local road agency's permit process and work should be coordinated with the construction inspection agency if different from the local agency issuing the permit. All corrective warranty work should be completed within the warranty term. If scheduling conflicts necessitate corrective work being completed outside of the warranty term, the local road agency shall be notified as soon as the contractor is aware of the conflict.

The rights and responsibilities of the contractor are further detailed in Section f. Rights and Responsibilities of the Contractor in the Local Agency Special Provision for Hot Mix asphalt and Concrete Pavement Warranty.

Supplemental Lien Bonds and Liability Insurance

In addition to the warranty bond that is in place, if corrective work is necessary the contractor must furnish supplemental lien bond to the local agency covering the corrective work. The Engineer is responsible for estimating the amount of the supplemental lien bond required. The amount should be approximately equal to the dollar amount of the corrective work. The contractor must also have liability insurance in place prior to performing corrective work during

the warranty period. The contractor should not be allowed on-site to perform corrective work during the warranty period until the supplemental lien bond is in place and the proper insurances verified. Depending on the nature and scope of the corrective work, the local agency may waive this supplemental lien bond, but not the liability insurance.

Warranty Inspections

Warranty inspections are limited to only mainline pavement areas. There are two types of inspections conducted during the warranty period. The cursory inspection is a simplified inspection to quickly identify segments in the project that may have distresses that exceed threshold values. This cursory inspection normally does not require a lane closure and is conducted from the roadway shoulder estimating distress lengths and widths. The detailed inspection requires direct measuring and reporting of all observed distress in each segment. Traffic control may be required to complete the detailed inspection.

The minimum inspection frequency for the various warranty provisions are specified in the applicable warranty inspection guidelines, see Appendix B. The minimum number of inspections is dependent upon the warranty duration. The local road agency may elect to perform additional inspections over & above the recommended minimum interim inspections. The suggested time frames in the inspection guidelines allow local road agencies to notify the contractor regarding warranty compliance. Interim inspections may be delayed if weather makes it difficult to inspect the road or creates an unsafe condition. Final inspections shall be completed in a timely manner to ensure that there is enough time to document any thresholds that exceed the condition thresholds and notify the contractor prior to the expiration of the warranty.

The designation of lanes during the warranty inspection shall be detailed adequately so that it is clear to all involved in the warranty process which lane is being referenced. If necessary, a sketch should be included. It is important to use the same lane numbering designation for all inspections conducted throughout the warranty period.

If defects are found in any inspection, they should be carefully and accurately documented, even if the severity or number does not meet the threshold to require corrective work. These notes shall be kept in the inspection files and reviewed prior to all future inspections of the work. The inspectors of the work should pay specific attention to areas previously noted, record those defects, and list any changes in those defects differing from the last inspection.

Correction of Defects

If inspections during the warranty term show a defect has exceeded the allowable threshold as defined in either the Hot Mixed Asphalt or Concrete Warranty specification, the contractor shall be notified of the finding. The agency should call for a joint field investigation to determine the cause of the defect, and to discuss the best possible remediation of the problem. If additional forensic investigation is desired, the scope of the investigation, party or consultant to conduct the investigation, and the cost split shall be agreed to by the engineer and contractor prior to scheduling the investigation.

If the contractor and engineer are in agreement, the Engineer shall send notice to contractor in writing the defect(s), location(s), recommended remediation and a request for a schedule to complete the work. The contractor will reply back to the Engineer**,** copying the local agency (and MDOT if MDOT had original construction oversight) with a schedule to complete the work.

The local agency will issue a permit to the contractor to complete the warranty work according to the Local Agency's Right-of-way permit policy. The contractor will complete the work under the inspection of the Engineer.

If the contractor and engineer disagree, then a Conflict Resolution Team (CRT) may be convened. The CRT will be made of:

- One (1) member selected, and compensated by the agency.
- One (1) member selected and compensated by the contractor.
- One (1) member mutually selected by the Agency and the contractor. Compensation for the third party member will be equally shared by the agency and the contractor.

At least two members of the CRT must vote in favor of a motion to make a decision. If the CRT decides to conduct a forensic investigation, the CRT will determine the scope of work and select the party to conduct the investigation. All costs related to the forensic investigation will be shared proportionately between the contractor and the agency based on the determined cause of the warranty defect condition.

Emergency Repairs

When the agency determines that emergency repairs of the warranted work are necessary for public safety, the agency or its agent may take immediate and sufficient repair action to address the imminent danger and to safeguard the traveling public. Prior to emergency repairs of warranted work, the agency will document the basis for the emergency action. In addition, the agency will preserve all documentation of the defective condition, including failed materials samples if applicable.

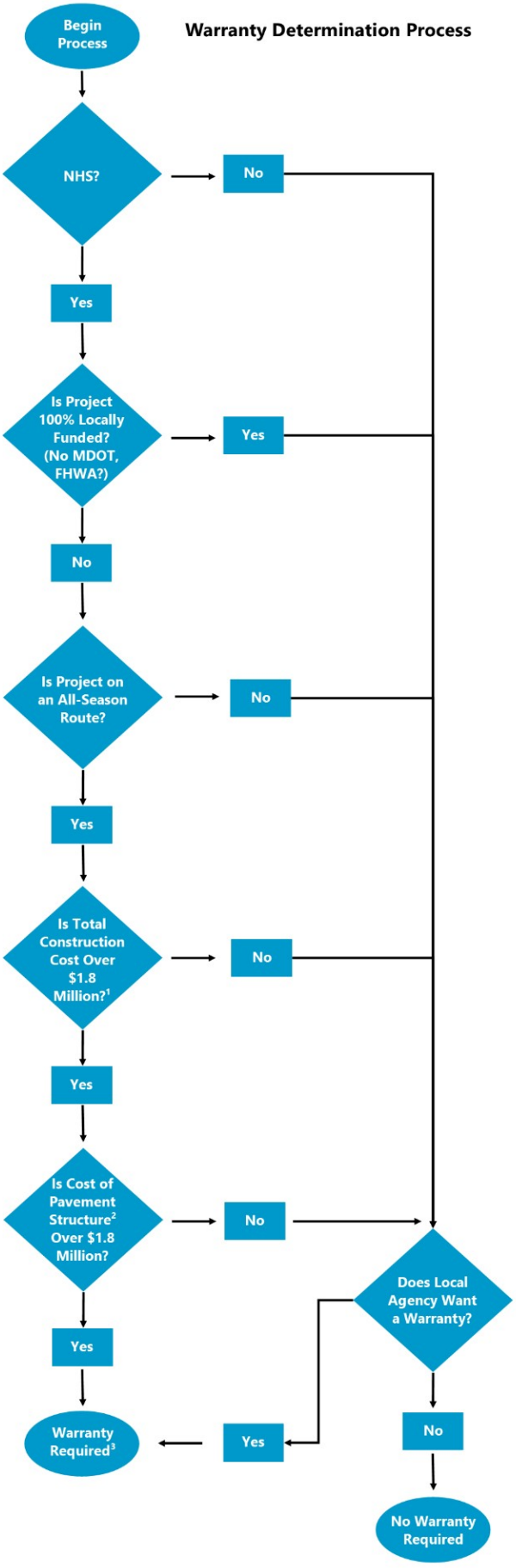
Once the imminent danger to the public has been addressed, the local road agency shall notify the contractor to explain the situation, identify the work temporarily done by the agency, and to what further actions need to happen to return the warranted work and pavement to threshold compliance. A joint inspection may be called to investigate the situation.

The emergency repairs of warranted work by the contractor must be authorized by the agency's engineer.

Should the contractor be unable to perform the emergency repair to the agency's satisfaction and/or within the time frame required by the agency, the agency will perform, or have performed any emergency repairs deemed necessary. Any such emergency repairs undertaken will not relieve the contractor from meeting the warranty requirements. Any costs associated with the emergency repairs will be paid by the contractor when due to a cause from defective materials and/or workmanship.

APPENDIX A

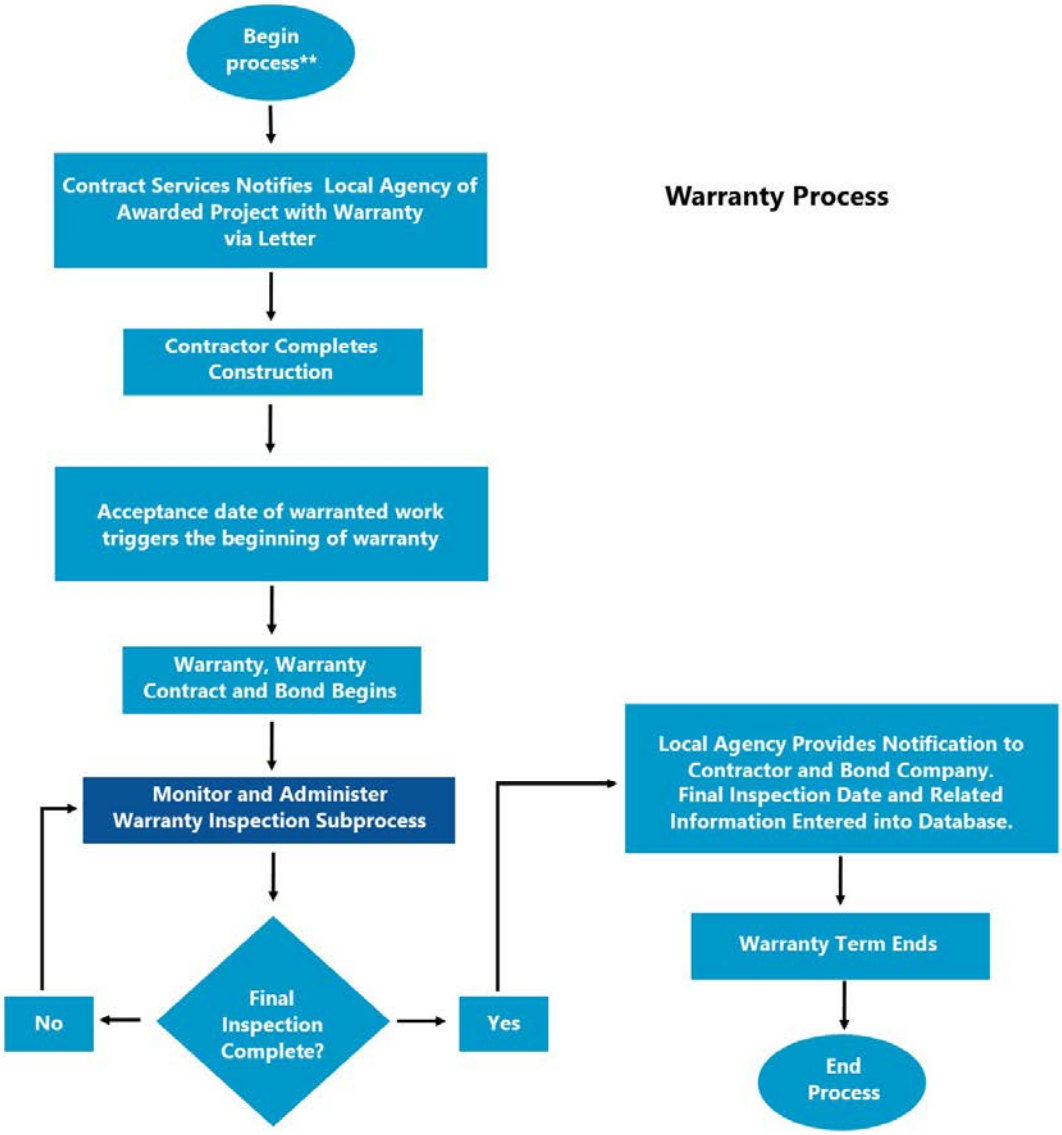
Flow Charts



[1]Use $1.8 million as cost to account for bid variability.

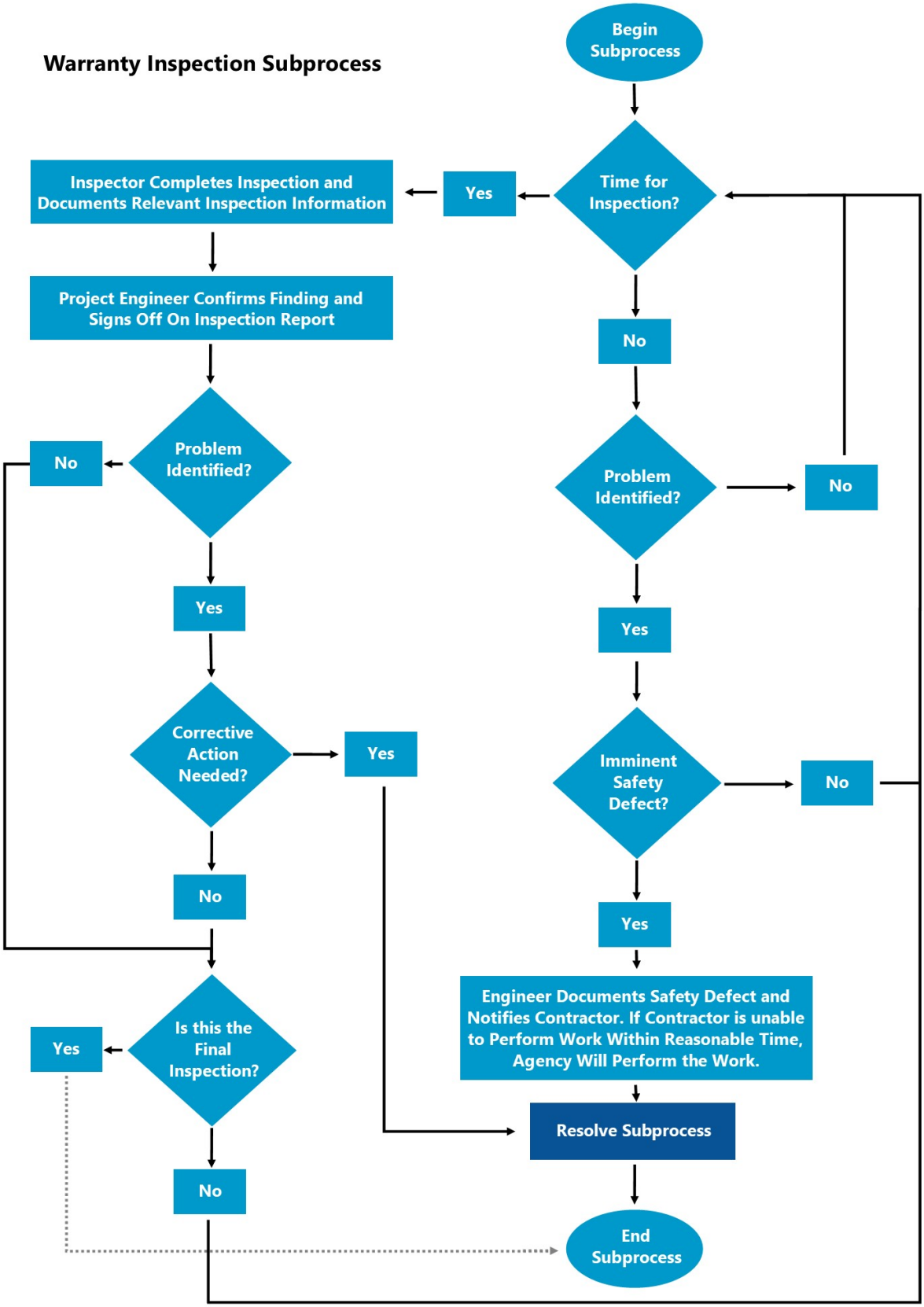
[2]Pavement structure as defined by MDOT Standard Specifications includes: HMA or concrete pavement, curbs, shoulders, aggregate or granular base, subbase and underdrain.

[3]If a local agency waives a warranty, an explanation will need to be reported.

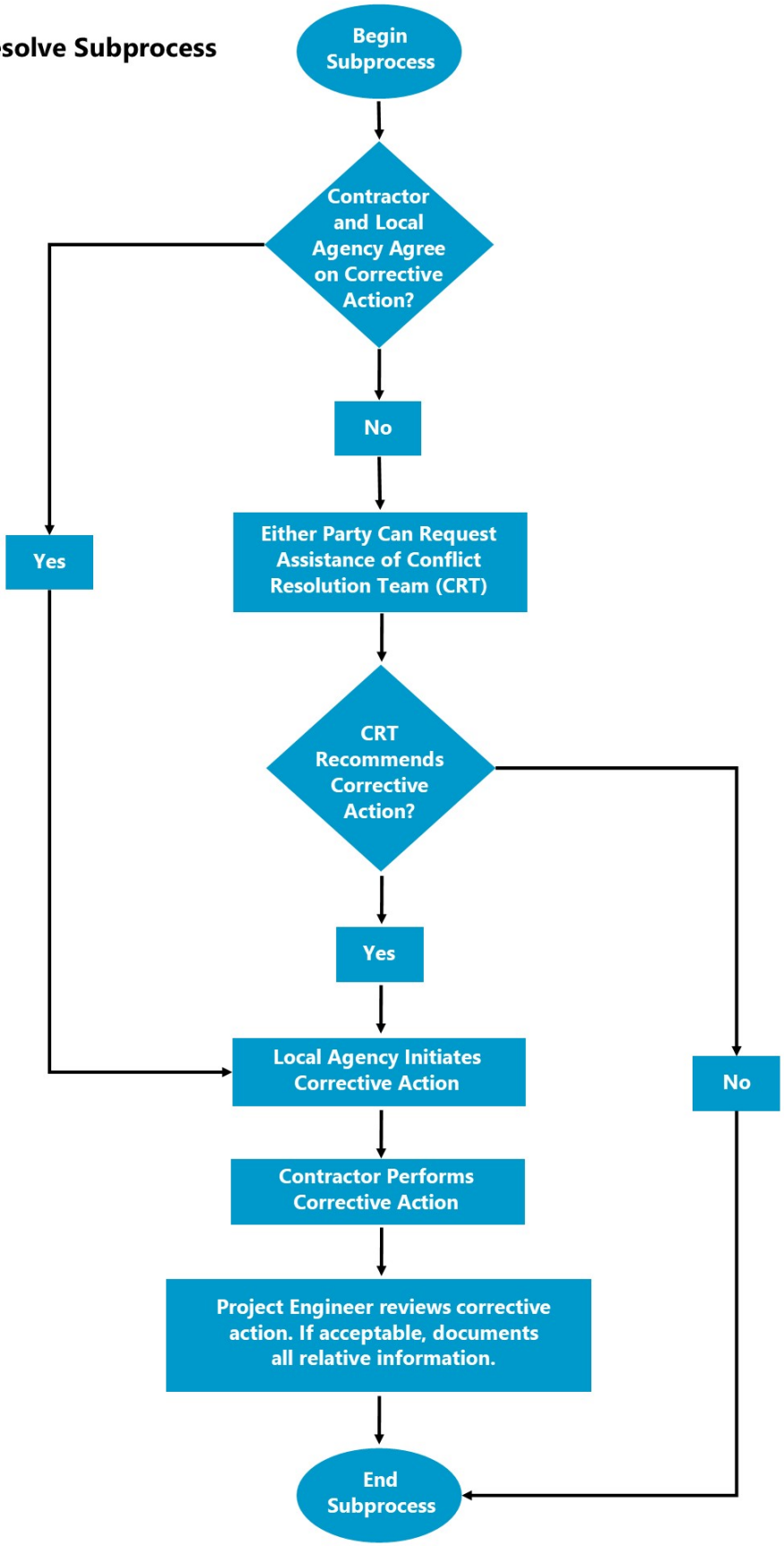


**This is the process if MDOT has oversight and/or MDOT let bid. If project is locally let, with no MDOT oversight, the local agency shall determine the process.

Warranty Inspection Subprocess



Resolve Subprocess



APPENDIX B

Inspection Guidelines

LOCAL AGENCY
WARRANTY INSPECTION GUIDELINES
HMA NEW CONSTRUCTION / RECONSTRUCTION

Warranty period: 5 Year

Inspection Period Begins: Interim - 6 months after Initial Acceptance Final
- 56 months after initial Acceptance
(Local Agency may do additional inspections)

Notes:
1. Segments defined as 528 foot (1/10 mile).
2. Each lane will be evaluated separately.
3. The threshold level for each distress type is determined separately.

Procedure: For both **INTERIM** & **FINAL** inspections

1. **Perform overview inspection**. Based on results of overview inspection, recommend the project for either:
    a. Acceptable – no corrective work needed. If this is the final inspection recommend acceptance of the work, or
    b. Detailed inspection – more detailed inspection and / or measurements are needed

2. **Perform detailed inspection if required**. Based on the results of detailed inspection, either:
    a. Acceptable – no corrective work needed. If this is the final inspection recommend acceptance of the work, or
    b. Warranty work is needed – Provide contactor written notice of the distresses and locations needing corrective work.

Condition Parameter Measurement:

Performance parameters will be measured as described for each of the following distress types in mainline pavement areas:

1. **Transverse Cracking** - Total number of transverse cracks in a segment. Each individual crack must exceed 5 feet in length to be included in the total.
2. **Longitudinal Cracking** - Total linear feet of longitudinal cracks in a segment. Each individual crack must exceed 5 feet in length to be included in the total.
3. **De-bonding**- Total longitudinal length, in feet, of de-bonding in a segment. Potholes are to be classified as de-bonding. Measure individual de-bonding locations in the longitudinal direction, regardless of width of the distress location and sum these lengths for the segment.
4. **Raveling -** Total longitudinal length, in feet, of raveling in a segment. Measure individual raveling locations in the longitudinal direction, regardless of width of the distress location and sum these lengths for the segment.
5. **Flushing** - Total longitudinal length, in feet, of flushing in a segment. Measure individual flushing locations in the longitudinal direction, regardless of width of the distress location and sum these lengths for the segment.

6. **Rutting** - The average rut depth, in inches, in a segment. Each wheel path shall be evaluated separately. If rutting is found, the pavement surface will be measured beginning at the POB and every 132 feet thereafter to determine average rut depth to quantify rutting for a particular segment. Rut measurements will be done using a straight rigid device that is a minimum of 7 feet long and of sufficient stiffness that it will not deflect from its own weight, or a wire under sufficient tension to prevent sag when extended 7 feet. Measurements will be taken by placing this "straightedge" across the pavement surface perpendicular to the direction of travel. The straightedge shall contact the surface on at least two bearing points with one located on either side of the rut. The straightedge is properly located when sliding the straightedge along its axis does not change the location of the contact points. Rut depth is then measured at the point of greatest perpendicular distance from the bottom of the straightedge to the pavement surface.
7. **Alligator Cracking** – Total area, in square feet, of alligator cracking in a segment. Measure individual alligator cracked areas and sum the areas for the segment.

Overview Inspection Procedure:

1. Review any notes from previous inspections.

2. Perform a "windshield" survey of the entire location length. Based solely on visual examination and estimated measurements, approximate the individual distress quantities for the questionable segment(s) of each distress type and record on the inspection form. Details which should be noted for the inspection include, but are not limited the following:
    a. The lane or ramp where the distress was noted and the associated direction.
    b. Approximate distress location (i.e. 1/4 mile north of the POB, or at the intersection of 1st St in SW quadrant, or near drive for house #123..)
    c. The distress quantity, in general terms (i.e. minor amounts of longitudinal cracking; mid lane flushing).
    d. Areas where temporary maintenance makes it difficult to determine the type of distress, (i.e. presence of cold patching material).

3. Estimate if any of the following distress threshold conditions are exceeded
    a. Transverse Cracking exceeds 3 total in the segment length (3 cracks within 528 feet) for any single segments.
    b. Longitudinal Cracking exceeds 10 percent of the segment length (53 feet within 528 feet) for any single segments.
    c. Debonding exceeds 5 percent (5%) of the segment length (26 feet within 528 longitudinal feet) for any 1 segment.
    d. Raveling exceeds 8 percent (8%) of the segment length (42 feet within 528 longitudinal feet) for any 1 segment.
    e. Flushing exceeds 5 percent (5%) of the segment length (26 feet within 528 longitudinal feet) for any 1 segment.
    f. Average rut depth exceeds 0.375 (3/8) inches for any 1 segment.
    g. Any amount of alligator cracking.

4. If **any** condition above is estimated to be true:
    a. Perform Detailed Inspection; and
    b. Provide a description of the magnitude and location(s) of the distress condition(s) observed which justify the Detailed Inspection.

5. If **all** conditions above are false:
    a. Recommend work is acceptable.
    b. If this is an interim or other non-final inspection, put notes in file.
    c. If this is final inspection recommend final acceptance.

Detailed Inspection Procedure:

1. Determine the questionable segments suspected of exceeding threshold limits for each individual distress type based on the overview inspection notes.

2. Document the lane, direction and distance from POB, of each questionable segment identified in Step 1.

3. For each questionable segment, measure and record the amount of each individual distress type and record on the inspection form.
    a. Transverse Cracking
    b. Longitudinal Cracking
    c. De-bonding
    d. Raveling
    e. Flushing
    f. Rutting
    g. Alligator Cracking

4. Determine if any of the threshold limits for transverse cracking, longitudinal cracking, de-bonding, raveling, flushing, or alligator cracking, listed under Overview Inspection, are exceeded.

5. Evaluate segments where the average rut depth appears to exceed 0.25 inches as follows.
    a. Measure the average rutting at all questionable segments to verify that the threshold was exceeded.

6. Warranty work is required at those segments for which any of the threshold limits for transverse cracking, longitudinal cracking, debonding, raveling, flushing, rutting, or alligator cracking are exceeded. Provide the contractor with results of the inspection indicating segments where warranty work is required.

LOCAL AGENCY
WARRANTY INSPECTION GUIDELINES
HMA CONSTRUCTION OVER AGGREGATE BASE
WITHOUT BASE OR DRAINAGE IMPROVEMENT

Warranty period: 3 Year

Inspection Period Begins: Interim **-** 6 months after Initial Acceptance Final
- 32 months after initial Acceptance
(Local Agency may do additional inspections)

Notes:

1. Segments defined as 528 foot (1/10 mile).
2. Each lane will be evaluated separately
3. The threshold level for each distress type is determined separately.

Procedure: For both **INTERIM** & **FINAL** inspections

1. **Perform overview inspection**. Based on results of cursory inspection, recommend the project for either:
    a. Acceptable – no corrective work needed. If this is the final inspection recommend acceptance of the work, or
    b. Detailed inspection – more detailed inspection and / or measurements are needed

2. **Perform detailed inspection if required**. Based on the results of detailed inspection, either:
    a. Acceptable – no corrective work needed. If this is the final inspection recommend acceptance of the work, or
    b. Warranty work is needed – Provide contactor written notice of the distresses and locations needing corrective work.

Condition Parameter Measurement:

Performance parameters will be measured as described for each of the following distress types in mainline pavement areas:

1. **Transverse Cracking** - Total number of transverse cracks in a segment. Each individual crack must exceed 5 feet in length to be included in the total.
2. **Longitudinal Cracking** - Total linear feet of longitudinal cracks in a segment. Each individual crack must exceed 5 feet in length to be included in the total.
3. **De-bonding**- Total longitudinal length, in feet, of de-bonding in a segment. Potholes are to be classified as de-bonding. Measure individual de-bonding locations in the longitudinal direction, regardless of width of the distress location and sum these lengths for the segment.
4. **Raveling -** Total longitudinal length, in feet, of raveling in a segment. Measure individual raveling locations in the longitudinal direction, regardless of width of the distress location and sum these lengths for the segment.
5. **Flushing** - Total longitudinal length, in feet, of flushing in a segment. Measure individual flushing locations in the longitudinal direction, regardless of width of the distress location and sum these lengths for the segment.

6. **Rutting** - The average rut depth, in inches, in a segment. Each wheel path shall be evaluated separately. If rutting is found, the pavement surface will be measured beginning at the POB and every 132 feet thereafter to determine average rut depth to quantify rutting for a particular segment. Rut measurements will be done using a straight rigid device that is a minimum of 7 feet long and of sufficient stiffness that it will not deflect from its own weight, or a wire under sufficient tension to prevent sag when extended 7 feet. Measurements will be taken by placing this "straightedge" across the pavement surface perpendicular to the direction of travel. The straightedge shall contact the surface on at least two bearing points with one located on either side of the rut. The straightedge is properly located when sliding the straightedge along its axis does not change the location of the contact points. Rut depth is then measured at the point of greatest perpendicular distance from the bottom of the straightedge to the pavement surface.
7. **Alligator Cracking** – Total area, in square feet, of alligator cracking in a segment. Measure individual alligator cracked areas and sum the areas for the segment.

Overview Inspection Procedure:

1. Review any notes from previous inspections.

2. Perform a "windshield" survey of the entire location length. Based solely on visual examination and estimated measurements, approximate the individual distress quantities for questionable segment(s) of each distress type and record on the inspection form. Details which should be noted for the inspection include, but are not limited the following:
    a. The lane or ramp where the distress was noted and the associated direction.
    b. Approximate distress location (i.e. 1/4 mile north of the POB, or at the intersection of 1st St in SW quadrant, or near drive for house #123..)
    c. The distress quantity, in general terms (i.e. minor amounts of longitudinal cracking; mid lane flushing).
    d. Areas where temporary maintenance makes it difficult to determine the type of distress, (i.e. presence of cold patching material).

3. Estimate if any of the following distress threshold conditions are exceeded
    a. Transverse Cracking exceeds 3 total in the segment length (3 cracks within 528 feet) for any 2 segments. All reflective cracking shall be ignored as these will not count against the allowable amount.
    b. Longitudinal Cracking exceeds 25 percent of the segment length (132 feet within 528 feet) for any 2 segments. All reflective cracking shall be ignored as these will not count against the allowable amount.
    c. Debonding exceeds 5 percent (5%) of the segment length (26 feet within 528 longitudinal feet) for any 1 segment..
    d. Raveling exceeds 8 percent (8%) of the segment length (42 feet within 528 longitudinal feet) for any 1 segment.

e. Flushing exceeds 5 percent (5%) of the segment length (26 feet within 528 longitudinal feet) for any 1 segment.
f. Average rut depth exceeds 0.375 (3/8) inches for any 1 segment.
g. Any amount of alligator cracking.

4. If **any** condition above is estimated to be true:
    a. Perform Detailed Inspection; and
    b. Provide a description of the magnitude and location(s) of the distress condition(s) observed which justify the Detailed Inspection.

5. If **all** conditions above are false,
    a. Recommend work is acceptable.
    b. If this is an interim or other non-final inspection, put notes in file.
    c. If this is final inspection recommend final acceptance.

Detailed Inspection Procedure:

1. Determine the questionable segments suspected of exceeding threshold limits for each individual distress type based on the overview inspection notes.

2. Document the lane, direction and distance from POB, of each questionable segment identified in Step 1.

3. For each questionable segment, measure and record the amount of each individual distress type and record on the inspection form.
    a. Transverse Cracking
    b. Longitudinal Cracking
    c. De-bonding
    d. Raveling
    e. Flushing
    f. Rutting
    g. Alligator Cracking

4. Determine if any of the threshold limits for transverse cracking, longitudinal cracking, de-bonding, raveling, flushing, or alligator cracking, listed under Overview Inspection, are exceeded.

5. Evaluate segments where the average rut depth appears to exceed 0.25 inches as follows.
    a. Measure the average rutting at all questionable segments to verify that the threshold was exceeded.

6. Warranty work is required at those segments for which any of the threshold limits for transverse cracking, longitudinal cracking, de-bonding, raveling, flushing, rutting, or alligator cracking are exceeded. Provide the contractor with results of the inspection indicating segments where warranty work is required.

LOCAL AGENCY
WARRANTY INSPECTION GUIDELINES
HMA OVERLAY

Warranty period: 1 Year

Inspection Period Begins: Final - 10 months after Initial Acceptance
(Local Agency may do additional inspections such as at 6 months after initial acceptance, after spring break up, etc.)

Notes:
1. Segments defined as 528 foot (1/10 mile).
2. Each lane will be evaluated separately.
3. The threshold level for each distress type is determined separately.

Procedure:
1. Preform **overview inspection**. Based on results of cursory inspection, recommend the project for either:
   a. Acceptable – no corrective work needed. If this is the final inspection recommend acceptance of the work, or
   b. Detailed inspection – more detailed inspection and / or measurements are needed

2**. Perform detailed inspection if required**. Based on the results of detailed inspection, either:
   a. Acceptable – no corrective work needed. If this is the final inspection recommend acceptance of the work, or
   b. Warranty work is needed – Provide contactor written notice of the distresses and locations needing corrective work.

Condition Parameter Measurement:

Performance parameters will be measured as described for each of the following distress types in mainline pavement areas:

1. **Transverse Cracking** - Total number of transverse cracks in a segment. Only count cracks that are not "reflective" from a prior crack or joint. Count all transverse cracks that cannot be positively identified as "reflective" or are questionable. Each individual crack must exceed 5 feet in length to be included in the total. Ignore transverse cracking for all single course overlays, or if the total thickness of multiple course overlays is 2" or less.
2. **Longitudinal Cracking** - Total linear feet of longitudinal cracks in a segment. Only count cracks that are ***not*** "reflective" from a prior crack or joint. Count all longitudinal cracks that cannot be positively identified as "reflective" or are questionable. Each individual crack must exceed 5 feet in length to be included in the total. Ignore transverse cracking for all single course overlays, or if the total thickness of multiple course overlays is 2" or less.
3. **De-bonding**- Total longitudinal length, in feet, of de-bonding in a segment. Potholes are to be classified as de-bonding. Measure individual de-bonding locations in the longitudinal direction, regardless of width of the distress location and sum these lengths for the segment.

4. **Raveling -** Total longitudinal length, in feet, of raveling in a segment. Measure individual raveling locations in the longitudinal direction, regardless of width of the distress location and sum these lengths for the segment.
5. **Flushing** - Total longitudinal length, in feet, of flushing in a segment. Measure individual flushing locations in the longitudinal direction, regardless of width of the distress location and sum these lengths for the segment.
6. **Rutting** - The average rut depth, in inches, in a segment. Each wheel path shall be evaluated separately. If rutting is found, the pavement surface will be measured beginning at the POB and every 132 feet thereafter to determine average rut depth to quantify rutting for a particular segment. Rut measurements will be done using a straight rigid device that is a minimum of 7 feet long and of sufficient stiffness that it will not deflect from its own weight, or a wire under sufficient tension to prevent sag when extended 7 feet. Measurements will be taken by placing this "straightedge" across the pavement surface perpendicular to the direction of travel. The straightedge shall contact the surface on at least two bearing points with one located on either side of the rut. The straightedge is properly located when sliding the straightedge along its axis does not change the location of the contact points. Rut depth is then measured at the point of greatest perpendicular distance from the bottom of the straightedge to the pavement surface.
7. **Alligator Cracking** – Total area, in square feet, of alligator cracking in a segment. Measure individual alligator cracked areas and sum the areas for the segment.

Overview Inspection Procedure:

1. Review any notes from previous inspections.

2. Perform a "windshield" survey of the entire location length. Based solely on visual examination and estimated measurements, approximate the individual distress quantities for the questionable segment(s) of each distress type and record on the inspection form. Details which should be noted for the inspection include, but are not limited the following:
    a. The lane or ramp where the distress was noted and the associated direction.
    b. Approximate distress location (i.e. 1/4 mile north of the POB, or at the intersection of 1st St in SW quadrant, or near drive for house #123..)
    c. The distress quantity, in general terms (i.e. minor amounts of longitudinal cracking; mid lane flushing).
    d. Areas where temporary maintenance makes it difficult to determine the type of distress, (i.e. presence of cold patching material).

3. Estimate if any of the following distress threshold conditions are exceeded
    a. Transverse Cracking exceeds 3 total in the segment length (3 cracks within 528 feet) for any 3 segments. All reflective cracking shall be ignored as these will not count against the allowable amount.

b. Longitudinal Cracking exceeds 25 percent of the segment length (132 feet within 528 feet) for any 3 segments. Ignore all reflective cracking. All reflective cracking shall be ignored as these will not count against the allowable amount.
c. Debonding exceeds 5 percent (5%) of the segment length (26 feet within 528 longitudinal feet) for any 1 segment.
d. Raveling exceeds 8 percent (8%) of the segment length (42 feet within 528 longitudinal feet) for any 1 segment.
e. Flushing exceeds 5 percent (5%) of the segment length (26 feet within 528 longitudinal feet) for any 1 segment.
f. Average rut depth exceeds 0.375 (3/8) inches for any 1 segment.
g. Any amount of alligator cracking.

4. If **any** condition above (in item 2) is estimated to be true:
   a. Perform Detailed Inspection; and
   b. Provide a description of the magnitude and location(s) of the distress condition(s) observed which justify the Detailed Inspection.

5. If **all** conditions above are false,
   a. Recommend work is acceptable.
   b. If this is an interim or other non-final inspection, put notes in file
   c. If this is final inspection recommend final acceptance.

Detailed Inspection Procedure:

1. Determine the questionable segments suspected of exceeding threshold limits for each individual distress type based on the overview inspection notes.

2. Document the lane, direction and distance from POB, of each questionable segment identified in Step 1.

3. For each questionable segment, measure and record the amount of each individual distress type and record on the inspection form.
   a. Transverse Cracking
   b. Longitudinal Cracking
   c. De-bonding
   d. Raveling
   e. Flushing
   f. Rutting
   g. Alligator Cracking

4. Determine if any of the threshold limits for transverse cracking, longitudinal cracking, de-bonding, raveling, flushing, or alligator cracking, listed under Overview Inspection, are exceeded.
5. Evaluate segments where the average rut depth appears to exceed 0.25 inches as follows.
   a. Measure the average rutting at all questionable segments to verify that the threshold was exceeded.

6. Warranty work is required at those segments for which any of the threshold limits for transverse cracking, longitudinal cracking, debonding, raveling, flushing, rutting, or alligator cracking are exceeded. Provide

the contractor with results of the inspection indicating segments where warranty work is required.

LOCAL AGENCY
WARRANTY INSPECTION GUIDELINES
NEW/RECONSTRUCTED JOINTED PLAIN CONCRETE PAVEMENT

Warranty period: 5 Years

Inspection Period Begins: Interim **-**30 months after Initial Acceptance Final
- 56 months after initial Acceptance
(Local Agency may do additional inspections)

Notes:

1. **Segment -** 528 feet in a specific driving lane. For inspection a segment begins at the point where the joint sealant failure or pavement distress begins to appear and extends for 528 feet from that point.
2. **Slab -** T**h**e pavement outlined between consecutive transverse joints and longitudinal joints or a longitudinal joint and the outer pavement edge. Segments consist of one or more slabs.
3. **Driving Lanes -** Each of the following is considered a Driving Lane.
    a. Each individual mainline lane.
    b. The sum of all ramp lanes and associated acceleration/deceleration lanes.
    c. The sum of all auxiliary lanes, such as passing lanes and turn lanes.
4. **Condition Parameters -** Each condition parameter has a threshold level applied to each segment and a maximum number of defective segments before corrective action is required. A segment is defective if the threshold level is exceeded.
5. **Longitudinal Joint Designation -** All inspections relate to the driving lane as defined in the warranty special provision. For tallying joint sealant failure and pavement distress (spalling), consider the entire perimeter of the slab in all cases. The condition parameter of the full joint associated with the slab being evaluated is considered even though two adjacent slabs may share the same interior longitudinal joint.
6. The contractor will not be required to take corrective measures as a result of the interim inspection unless the Engineer determines emergency repairs are needed for public safety. Any faults or distresses noted will be logged and verified with the final inspection.

Procedure: For both **INTERIM** & **FINAL** inspections

1. **Perform overview inspection**. Based on results of overview inspection, recommend the project for either:
    a. Acceptable – no corrective work needed. If this is the final inspection recommend acceptance of the work, or
    b. Detailed inspection – more detailed inspection and / or measurements are needed

2. **Perform detailed inspection if required.** Based on the results of detailed inspection, either:
    a. Acceptable – no corrective work needed. If this is the final inspection recommend acceptance of the work, or
    b. Warranty work is needed – Provide contactor written notice of the distresses and locations needing corrective work.

Overview Inspection Procedure:

1. Review any notes from previous inspections of the work.

2. Perform a "windshield" survey of the entire project length. Inspect all driving lanes. Based solely on visual examination and estimated measurements, approximate the individual distress quantities for the questionable segment(s) of each distress type and record on the inspection form. Details which should be noted for the inspection include, but are not limited the following:
    a. The lane or ramp where the distress was noted and the associated direction.
    b. Approximate distress location (i.e. 1/4 mile north of the POB, or at the intersection of 1st St in SW quadrant, or near drive for house #123..)
    c. Estimate the distress quantity. Also include a description of distress in general terms (i.e. minor amounts of longitudinal cracking; every joint has loss of sealant).
    d. Areas where temporary maintenance makes it difficult to determine the type of distress, (i.e. presence of cold patching material).

3. If this is an **interim** or other non-final inspection, Put notes in file and STOP HERE.

4. If this is the final inspection, estimate if any of the following distress threshold conditions are exceeded
    a. Transverse Cracking exceeds 2 total for any 1 segment. (2 cracks within 528 feet).
    b. Longitudinal Cracking exceeds 5 percent (5%) of the segment length (26 feet within 528 feet) for any 1 segment.
    c. Map Cracking exceeds 10 percent (10%) of the segment area (632 square feet within 528 longitudinal feet assuming 12 foot lane width) for any 1 segment.
    d. Spalling exceeds 10 percent (10%) of each slab. Can be noncontiguous. Include all 4 sides of the slab.
    e. Scaling exceeds 15 percent (15%) of the slab area.
    f. Corner cracking exceeds 1 for any 1 segment.
    g. Joint Sealant failure exceeds 10 percent (10%) total joint length in a segment. Include both longitudinal & transverse joints
    h. Any shattered slabs.

5. If any condition above is true:
    a. Perform Detailed Inspection; and
    b. Provide a description of the magnitude and location(s) of the distress condition(s) observed which justify the Detailed Inspection.

6. If all conditions above are false and this is the final inspection, recommend Final Acceptance.

Detailed Inspection Procedure: This will be done at **FINAL** inspection when distresses are estimated to be at threshold levels, and at **INTERIM** inspections as directed by the engineer.

1. Determine the questionable segments suspected of exceeding threshold limits for each individual distress type based on the overview inspection notes.

2. Document the lane, direction and distance from POB, of each questionable segment identified in Step 1.

3. For each questionable segment, measure and record the amount of each individual distress type and record on the inspection form.
    a. Transverse Cracking
    b. Longitudinal Cracking
    c. Map Cracking
    d. Spalling
    e. Flushing
    f. Scaling
    g. Joint sealant failure
    h. Shattered slabs

4. Determine if any of the threshold limits for the various distresses are exceeded.

5. Warranty work is required at those segments for which any of the threshold limits are exceeded. Provide the contractor with results of the inspection indicating segments where warranty work is required.

APPENDIX C

Inspection Forms

Under Development

The inspections forms have not been developed to-date; the Task Force Education Committee is working with LTAP to create inspection forms compatible with the RoadSoft program to enable tracking the warranty inspection forms to the actual location along a road segment

INSPECTION FORM FOR HMA WARRRANTY WORK

Inspected By: _____ Date: _____

Type of inspetion: ___ Interim ___ Final ___ Special

Type of Construction: ___ New HMA Construction / Reconstruction

___ HMA over Ag. Base without other imrovements

___ HMA Overlay

OVER AGGREGATE BASE WITHOUT BASE OR DRAINAGE IMPROVEMENTS		SINGLE COURSE & MULTIPLE COURSE OVERLAY (a)	
Threshold Limits Per Segment (Segment Length = 528 feet = 1/10 mile)	Max. Defective Segments Per Driving Lane-Mile	Threshold Limits Per Segment (Segment Length = 528 feet = 1/10 mile)	Max. Defective Segments Per Driving Lane-Mile
3 years		1 year	
3	2 (b)	3	3 (b)
5% of Segment length	2 (b)	25% of Segment length	3 (b)
5% of Segment length	1	5% of Segment length	1
3% of Segment length	1	8% of Segment length	1
5% of Segment length	1	5% of Segment length	1
Ave. rut depth = 3/8 inch	1 (c)	Ave. rut depth = 3/8 inch	1 (c,d)
Any amount	0 (none allowed)	Any amount	0 (none allowed)

Distresses Found?	____Yes (Describe below, attach additonal sheets if needed)					____No
Distresses Found: (Describe type, severity & location)						
Corrective action needed?	_____ Yes	_____ No		_____ Needs further evaluation		
Signed (INSPECTOR):_____						
Checked by (ENGINEER):_____						

INSPECTION FORM FOR CONCRETE WARRRANTY WORK

Inspected By: _____ Date: _____

Type of Inspection: ___ Interim ___ Final ___ Special

Type of Construction: ___ Plain Concrete

___ Reinforced Concrete

hold Limits Per Segment gth = 528 feet)	Max. Defective Segments Per Driving Lane-Mile (a)
2	1
segment length	1
f segment area	1
each slab (b) < 2 slabs	1
f the slab area < 1 slab	1
1	1
joint length (c) < 2 slabs	1
0 (d)	0

Distresses Found?	____Yes (Describe below, attach additonal sheets if needed)					____No
Distresses Found: (Describe type, severity & location)						
Corrective action needed?	_____ Yes	_____ No		_____ Needs further evaluation		
Signed (INSPECTOR):_____						
Checked by (ENGINEER):_____						

APPENDIX D

Model Pavement Warranty Contract and Bond Forms

a. Description. This special provision establishes the conditions under which and method for a contractor to assign responsibility for the warranty obligations and the providing of a warranty bond to a warranty contractor(s). Second tier subcontractor assignments are prohibited.

b. Requirements. Ensure the Warranty Contract(s) and warranty bond(s) are on forms provided by the Local Agency. Ensure the bonds meet the requirements of Michigan law and of the Local Agency and include other items such as the powers of Attorney and Endorsement as specified by the Local Agency.

c. Method. The assignment must be made to the warranty contractor(s) that will perform the work covered by the warranty. If for any reason after signing the Warranty Contract and providing the Warranty Bond, the warranty contractor does not perform the work, the warranty contractor will remain obligated for the warranty obligations and the warranty bond obligations will remain in effect unless the Local Agency consents in writing to substituting a different contractor to assume those warranty obligations and accepts a substitute warranty bond.

The assignment of warranty work must be designated with and at the time of electronic bid submittal. To become a warranty contractor responsible for the warranty obligations of the contract, and providing a warranty bond, the warranty contractor must complete and submit to the Local Agency a Warranty Contract and a Warranty Bond for each warranty it will be responsible for. Ensure the Warranty Contract is signed by an authorized signer of the warranty contractor, as identified in its prequalification application.

Submit the Warranty Contract and Warranty Bond to the Local Agency prior to award of the construction contract to the prime contractor for the work to which the warranty applies. Ensure the warranty contractor is prequalified in the work classification for the type of work to be warranted. The Warranty Bond must guarantee performance of all warranty obligations for the covered work, in accordance with the Warranty Contract. All provisions of the prime contract will be applicable to the warranty contractor in regard to the warranty work, except as otherwise expressly provided in the Warranty Contract.

Under no circumstances does the assignment of the warranty work and the execution of a Warranty Contract create any obligations to the Local Agency beyond the obligations undertaken in the prime contract. The purpose of the Local Agency accepting the assignment of warranty obligations is to allow a warranty contractor to stand in place of the prime contractor for purposes of the warranty work without increasing any obligation or liability that the Local Agency would have had if the prime contractor had not assigned the warranty work.

d. Measurement and Payment. This work will not be paid for separately, but will be included in costs for other pay items.

Village of Lincoln, MI
LOCAL AGENCY
PASS-THROUGH WARRANTY BOND

Bond Number:_____

KNOWN ALL MEN BY THESE PRESENTS

That we,___(hereinafter called the "Principal" and __(hereinafter called "Surety") a corporation duly organized under the laws of the State of _____and duly licensed to transact business in the State of Michigan, are held and firmly bound unto the ___*Village of Lincoln, MI*_____ (hereinafter called the "Obligee"), in the sum of $_____ dollars for the payment of which sum well and truly to be made, we, the said Principal and the said Surety, bind ourselves, our heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, the said Principal has heretofore entered into a contract with the Obligee, under Contract ID__ and;

WHEREAS, the said Principal is required to guarantee the:

installed under said contract, against defects in materials or workmanship which may develop during the period of_____years beginning the date of the Acceptance Date of Warranted Work by the Obligee.

In no event shall losses paid under this bond aggregate more than the amount of the bond.

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION IS SUCH, that if said Principal shall faithfully carry out and perform the said guarantee, and shall, on due notice, repair and make good at its own expense any and all defects in materials or workmanship in the said work which may develop during the period specified above or shall pay over, make good and reimburse to the said Obligee all loss and damage which said Obligee may sustain by reason of failure or default of said Principal so to do, then this obligation shall be null and void; otherwise shall remain in full force and effect.

PROVIDED HOWEVER, that in the event of any default on the part of said Principal, a written statement of the particular facts showing such default and the date thereof shall be delivered to the Surety by registered mail, promptly in any event within ten (10) days after the Obligee or his representative shall learn of such default and that no claim, suit or action by reason of any default of the Principal shall be brought hereunder after the expiration of thirty (30) days from the end of the warranty period as herein set forth.

Signed by:_____ day of _____ 20_____.

Contractor_____

By_____

Surety_____

By_____

PASS THROUGH WARRANTY CONTRACT

This contract ID number _____is executed on the date signed below by the_____ of the Village of Lincoln, MI between the Warranty Contractor, Prime Contractor and the Local Agency in conjunction with the execution of this contract ID number, between the Local Agency and the Prime Contractor.

(Warranty Contractor)

(Prime Contractor)

The work included within this Warranty Contract is, described here:

The Warranty Contractor represents that it has entered into a subcontract with the Prime Contractor to perform Warranted Work for the project, but that any failure to have properly done so, or any breach or failure in the performance of that subcontract, shall not diminish or otherwise affect the obligations of the Warranty Contractor to the Local Agency under this warranty contract. Nor shall the obligations of the Warranty Contractor to the Local Agency under this warranty contract be diminished or affected if the Prime Contractor or some other person performs some or all of the Warranted Work or warranty obligations for the project, unless the Local Agency consents to, and executes, a written amendment to this warranty contract.

Insofar as they pertain to the warranty rights and obligations, the terms of the contract are hereby incorporated by reference into this warranty contract and, for purposes of this warranty contract, references in the contract to the contractor shall be deemed to refer to the Warranty Contractor.

The Warranty Contractor hereby agrees to fulfill and perform, without qualification or exception, all of the warranty obligations under the terms of the contract, as if they were the Prime Contractor. Until acceptance of the Warranted Work, the Prime Contractor will be responsible to the Department for ensuring completion of the Warranted Work and to the Local Agency for fulfilling the terms of the warranty for that work. Upon acceptance of the Warranted Work, the Warranty Contractor shall have full responsibility for the warranty obligations and the Prime Contractor will be relieved of further obligation for performing those warranty obligations.

The Warranty Contractor agrees that its obligations to the Local Agency under this warranty contract are the same as if the Warranty Contractor was the Prime Contractor; the Warranty Contractor can assert no rights, defenses or qualifications to the warranty obligations under the contract that would have been unavailable to the Prime Contractor, if the Prime Contractor had retained contractual responsibility for the warranty. The Warranty Contractor may assert the same rights under the terms of the warranty as could have been asserted by the Prime Contractor, if the Prime Contractor had retained contractual responsibility for the warranty.

This warranty contract may be executed prior to execution of the contract with the Prime Contractor, provided that if the Local Agency fails to execute the contract with the Prime Contractor this warranty contract shall be null and void.

By: _____ By: _____

Title: _____ Title: _____

By: _____

Typed name: _____

Local Agency: _____

Date: ____

APPENDIX E

Reporting Forms

Under Development

Local Road Agencies Warranty Program Reporting

We have partnered with the Transportation Asset Management Council to modify the Investment Reporting Tool to provide an open and transparent reporting method for each local transportation agency. The reporting fields will be enabled as soon as the Local Agency Pavement Warranty Program is approved by MDOT

We have also partnered with the Michigan Technological University - CTT to modify the Roadsoft Program to provide a common data entry method for each local road agency. The Roadsoft warranty data fields will be imported into the TAMC ITR module to provide a statewide presentation of the warranty projects that exceed the $ 2,000,000 threshold.

APPENDIX F

Education and Training

Under Development

Education of Local Road Agencies on Local Pavement Warranty Program

Since the passage of the 2015 Transportation Package, the CRA has been informing its members of the coming warranty requirement; the *Engineering Updates* provided by the CRAMML Engineering Specialist have also described the imminent Local Pavement Warranty Program. The CRA provided updates about the Local Pavement Warrant Program at its nine regional Council meetings during fall-winter 2017-2018; at its County Engineers Workshop in February 2018; at its Highway Conference in March 2018, and at its Road Commissioners Conference in April 2018. The CRA is also developing this Guidance Document on Local Pavement Warranties to serve as the training manual for. The CRA has scheduled and dedicated a large portion of its annual 2017 Law Symposium to a session on Implementing the New Local Pavement Warranties on December 5, 2017; speakers include the legal counsel from the Road Commission for Oakland County and CRA-MML Engineering Specialist Steve Puuri. The CRA-MML Engineering Specialist Steve Puuri and two bond counsel representatives provided an update at the Michigan Concrete Association.

In addition, the Local Pavement Warranty Task Force has created an Education Committee that has been developing model agency adoption resolutions and training materials. The Task Force has partnered with the Local Technical Assistance Program to develop and conduct training program for decision makers and project staff. The Education Committee is poised to distribute adoption and training materials upon approval of the Local Agency Pavement Warranty Program by MDOT. Finally, the Task Force has developed this Guidance Document to assist local agency decision makers and project staff with implementing their Local Agency Pavement Warranty.