MDOT PAVEMENT WARRANTY

Dave Weber

weberd@michigan.gov

Pavement Operations
Design Basic Training
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WHY PAVMENENT WARRANTIES

MDOT PAVEMENT WARRANTY PROGRAM

- **Public Act 79 of 1997 (effective July 28, 1997)**

  "Of the amounts appropriated for state trunk line projects, the department shall, where possible, secure warranties of not less than 5-year full replacement guarantee for contracted construction work."

- **Public Act 175 of 2015 (effective April 1, 2016)**

  "Of the amounts appropriated for state trunk line projects, the department shall, where possible, secure pavement warranties for full replacement or appropriate repair for contracted construction work on pavement projects whose cost exceeds $2,000,000.00 and projects for new construction or reconstruction..."

- Currently MDOT requires that, with a few exceptions, projects containing pavement construction, bridge painting, or concrete surface coating will include a warranty.

TYPES OF WARRANTIES

The objective of warranties is partial transfer of risk from the buyer to the producer. A defective product does not translate to a total loss to the consumer.

Most common Warranty is manufacturer's

1. Total replacement over some specified time period or verifiable product use.
2. Partial replacement or reimbursement dependent upon specified time period or measured wear.

TYPES OF WARRANTIES

Pavement Warranties

1. Materials and Workmanship
   - Typically 3 to 5 years
   - Contractor provides protection for elements of work within his control; materials selection and workmanship
   - New construction, Reconstruction, Major Rehabilitation, Multi-Course HMA Overlay
   - Cold Mill and Multi-Course Overlay, Bridge Deck Overlay

2. Performance
   - Typically 2 to 3 years
   - Contractor guarantees performance for materials selection, workmanship and some aspects of design
   - Capital Preventive Maintenance (CPM) and Bridge Painting
     - 2 Year Warranty – Chip Seal, Micro-Surface, Ultra-Thin HMA Overlay, HMA Crack Treatment, Bridge Painting, Concrete Surface Coat
     - 3 Year Warranty – Non-structural HMA Overlay, Cold Mill and HMA Resurfacing, Paver Placed Surface Seal

WARRANY USE DOCUMENTS

GUIDELINES FOR ADMINISTERING WARRANTIES ON ROAD AND BRIDGE PROJECTS

GUIDELINES FOR ADMINISTRING WARRANTIES ON ROAD AND BRIDGE CONSTRUCTION PROJECTS

pw://HCV591PWISPAA01.ngds.state.mi.us:MDOTProjectWise/Documents/Statewide&space;Groups/CFS/Warranty&space;Administration/

1. Warranty Process
2. Warranty Inspection Guidelines
3. Warranty Inspection Forms -
   - 2012 Warranty specs and Inspection form numbers.xlsx
4. Special Provision Version and Format
   - (2012) https://mdotcf.state.mi.us/public/dessssp/spss/gotoview.cfm?ds=27
   - (2020) https://mdotcf.state.mi.us/public/dessssp/spss/gotoview.cfm?ds=31
5. MDOT Pavement Warranty Decision Tree

FREQUENTLY USED SPECIAL PROVISION

12/20 SP	FUSP Title	Warranty Length (yr)	Form #	Inspection Form Name
500A	MATERIALS AND WORKMANSHIP PAVEMENT WARRANY	Boilerplate for all M&W warranties		
500B	PAVEMENT PERFORMANCE WARRANTY	Boilerplate for all perf warranties		
501N	WARRANTY WORK REQUIREMENTS FOR NEW/RECONSTURCTGED HOT MIX ASPHALT PAVEMENT ON UNBOUNDED OR STABILIZED BASE	5	1134	Field Evaluation of Warranty Performance Superpave and Hot Mix Asphalt (1st Cursory Inspection)
			1134A	Field Evaluation of Warranty Performance Superpave and Hot Mix Asphalt (2nd Cursory Inspection)
			1134C	Field Evaluation of Warranty Performance Superpave and Hot Mix Asphalt (Detailed Inspection)
501O	WARRANTY WORK REQUIREMENTS FOR MULTIPLE COURSE HOT MIX ASPHALT OVERLAYS ON COMPOSITE PAVEMENT; MULTIPLE COURSE HOT MIX APSHALT OVERLAYS ON FLEXIBLE PAVEMENT	5	1134	Field Evaluation of Warranty Performance Superpave and Hot Mix Asphalt (1st Cursory Inspection)
			1134A	Field Evaluation of Warranty Performance Superpave and Hot Mix Asphalt (2nd Cursory Inspection)
			1134C	Field Evaluation of Warranty Performance Superpave and Hot Mix Asphalt (Detailed Inspection)
501P	WARRANTY WORK REQUIREMENTS FOR MULTIPLE COURSE HOT MIX ASPHALT OVERLAYS ON COMPOSITE PAVEMENT; MULTIPLE COURSE HOT MIX APSHALT OVERLAYS ON FLEXIBLE PAVEMENT	5	1134	Field Evaluation of Warranty Performance Superpave and Hot Mix Asphalt (1st Cursory Inspection)
			1134A	Field Evaluation of Warranty Performance Superpave and Hot Mix Asphalt (2nd Cursory Inspection)
			1134C	Field Evaluation of Warranty Performance Superpave and Hot Mix Asphalt (Detailed Inspection)
501Q	WARRANTY WORK REQUIREMENTS FOR MULTIPLE COURSE HOT MIX ASPHALT OVERLAYS ON COMPOSITE PAVEMENT; MULTIPLE COURSE HOT MIX APSHALT OVERLAYS ON FLEXIBLE PAVEMENT	5	1134	Field Evaluation of Warranty Performance Superpave and Hot Mix Asphalt (1st Cursory Inspection)
			1134A	Field Evaluation of Warranty Performance Superpave and Hot Mix Asphalt (2nd Cursory Inspection)
			1134C	Field Evaluation of Warranty Performance Superpave and Hot Mix Asphalt (Detailed Inspection)

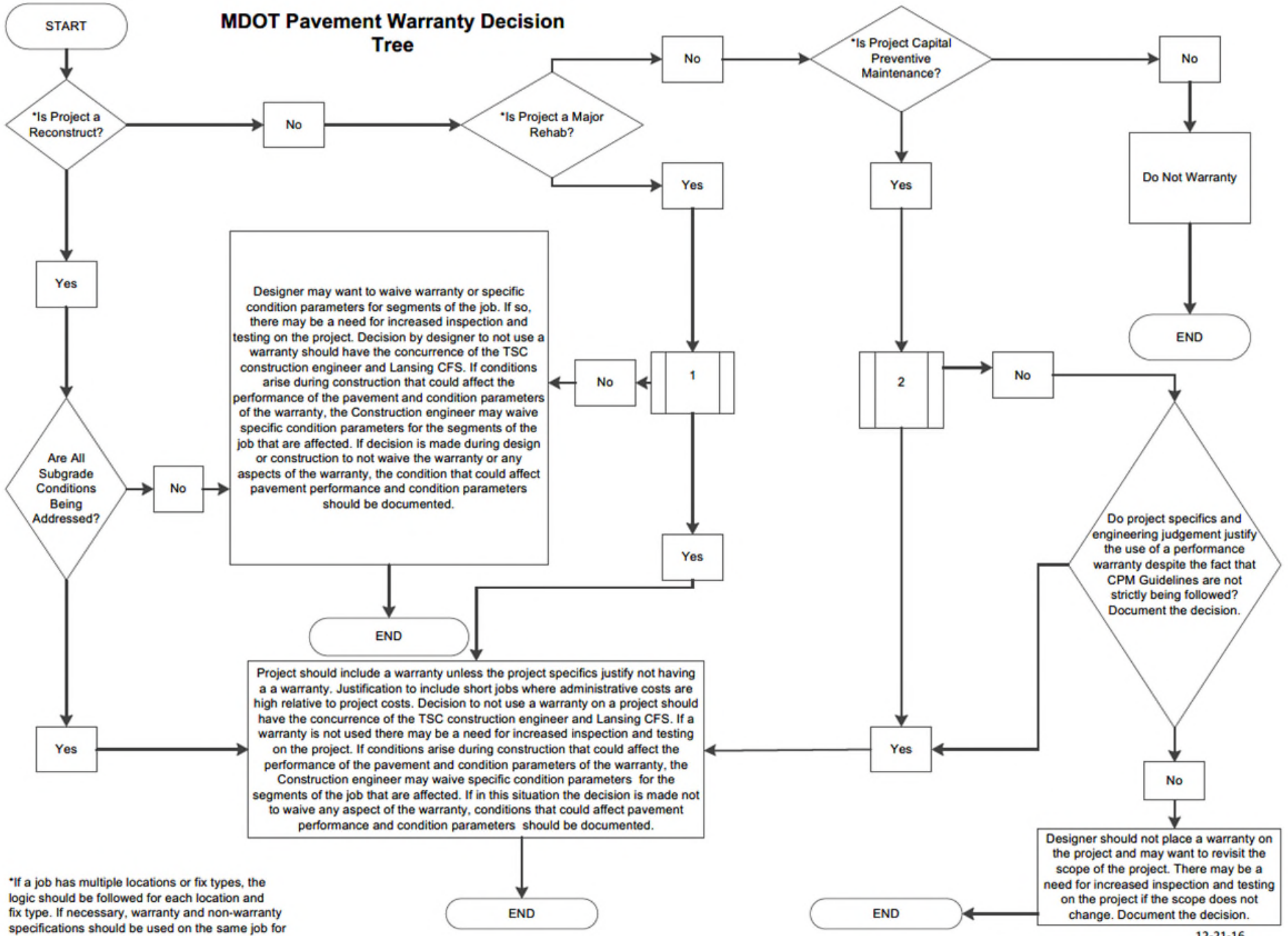
FREQUENTLY USED SPECIAL PROVISION

12/20 SP	FUSP Title	Warranty Length (yr)	Form #	Inspection Form Name
501R	WARRANTY WORK REQUIREMENTS FOR COLD MILLING AND ONE COURSE HOT MIX ASHPALT OVERLAY (CAPTIAL PREVENETIVE MAINTENANCE)	5	1184	CPM-HMA Overlay & Cold mill and HMA Overlay (Cursory Inspection) Field Evaluation of Warranty Performance.
			1193A	CPM-HMA Overlay & Mill and HMA Overlay Detailed Inspection (Longitudinal Cracking/Open Joint)
			1193B	CPM-HMA Overlay & Mill and HMA Overlay Detailed Inspection (Debonding)
			1193C	CPM-HMA Overlay & Mill and HMA Overlay Detailed Inspection (Raveling)
			1193D	CPM-HMA Overlay & Mill and HMA Overlay Detailed Inspection (Flushing)
			1193E	CPM-HMA Overlay & Mill and HMA Overlay Detailed Inspection (Rutting)
			1184	CPM-HMA Overlay & Cold mill and HMA Overlay (Cursory Inspection) Field Evaluation of Warranty Performance.
501S	WARRANTY WORK REQUIREMENTS FOR ONE COURSE HOT MIX ASPHALT OVERALY (CAPITAL PREVENETIVE MAINTENANCE)	5	1193A	CPM-HMA Overlay & Mill and HMA Overlay Detailed Inspection (Longitudinal Cracking/Open Joint)
			1193B	CPM-HMA Overlay & Mill and HMA Overlay Detailed Inspection (Debonding)
			1193C	CPM-HMA Overlay & Mill and HMA Overlay Detailed Inspection (Raveling)
			1193D	CPM-HMA Overlay & Mill and HMA Overlay Detailed Inspection (Flushing)
			1193E	CPM-HMA Overlay & Mill and HMA Overlay Detailed Inspection (Rutting)
502A	WARRANTY WORK REQUIREMENTS FOR HOT MIX ASPHALT CRACK TREATMENT (CAPITAL PREVENETIVE MAINTENANCE)	5	1046	CPM - HMA Crack Treatment Detailed Inspection Field Evaluation of Warranty Performance
			1047	CPM - HMA Crack Treatment Cursory Inspection Field Evaluation of Warranty Performance
504A	WARRANTY WORK REQUIREMENTS FOR MICRO-SURFACING (CAPITAL PREVENETIVE MAINTENACNE)	5	1893	CPM – Micro-surfacing (Cursory Inspection) Field Evaluation of Warranty Performance
			1894	CPM – Micro-surfacing (Worksheet) Field Evaluation of Warranty Performance

FREQUENTLY USED SPECIAL PROVISION

12/20SP	FUSP Title	Warranty Length (yr)	Form #	Inspection Form Name
504C	WARRANTY WORK REQUIREMENTS FOR HOT MIX ASPHALT ULTRA-THIN OVERLAY (CAPITAL PREVENTIVE MAINTENANCE)	2	1946	CPM-HMA Overlay & Cold mill and HMA Overlay (Cursory Inspection) Field Evaluation of Warranty Performance.
			1947	CPM-HMA Ultra Thin Overlay (Cursory Inspection)Field Evaluation of Warranty Performance
503A	WARRANTY WORK REQUIREMENTS FOR PAVER PLACED SURFACE SEAL (CAPITAL PREVENTIVE MAINTENANCE)	2	1948	CPM-Paver Place Surface Seal (Cursory Inspection) Field Evaluation of Warranty Performance
			1949	CCPM-Paver Place Surface Seal (Detailed Inspection Worksheet) Field Evaluation of Warranty Performance
505A	WARRANTY WORK REQUIREMENTS FOR SINGLE CHIP SEAL (CAPITAL PREVENETIVE MAINTENANCE)	2	1167B	Field Evaluation of Warranty Performance Chip Seal – CPM
505B	WARRANTY WORK REQUIREMENTS FOR DOUBLE CHIP SEALS (CAPITAL PREVENTIEVE MAINTENANCE)		1167B	Field Evaluation of Warranty Performance Chip Seal - CPM
602C	WARRANTY WORK REQUIREMENTS FOR NEW/RECOSNTRUCTED JOINTED PLAIN CONCRETE PAVEMENT	5	1115	Concrete Pavement Warranty Cursory Inspection
			1831	Field Evaluation of Warranty Performance JPCP/JRCP (Second Cursory Inspection – Worst Segments)
			1884	Field Evaluation of Warranty performance JPCP/JRCP (First Cursory inspection)
			1885	Field Evaluation of Warranty Performance JPCP/JRCP (Detail Inspection-Questionable Segments)
710A	WARRANTY ON CONCRETE SURFACE COATING	2		
712C	PERFORMANCE WARRANTY, THIN EPOXY BRIDGE DECK OVERLAY	2	1881	Concrete Deck overlay Material Workmanship Warranty Inspection Form
715A	WARRANTY ON BRIDGE COATING	2	1802	Bridge Painting Performance Warranty (Bridge Coating Warranty Inspection Form)

MDOT Pavement Warranty Decision Tree



*If a job has multiple locations or fix types, the logic should be followed for each location and fix type. If necessary, warranty and non-warranty specifications should be used on the same job for the appropriate locations and fix types.

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FIX TYPE	SCOPING/DESIGN/CONSTRUCTION ISSUE BY FIX TYPE
Repair Existing Pavement and Multiple Course HMA Overlay	Have the appropriate number of joint repairs been completed on rigid and composite pavements? For all pavement types, have the appropriate number of repairs (repair of base failures, depression, voids, loose or deteriorate materials, patched areas with poor adhesion, etc.) been completed? Have existing ruts been removed and the cause of the ruts been addressed? Have existing base, subbase, and subgrade conditions been addressed?
Mill Existing and Multiple Course HMA	Have the appropriate number of joint repairs been completed on rigid and composite pavements? For all pavement types, have the appropriate number of repairs (repair of base failures, depressions, voids, loose or deteriorated materials, patched areas with poor adhesion, etc.) been completed? Have existing ruts been removed and the cause of the ruts been addressed? Have existing base, subbase and subgrade conditions been addressed?
Crush & Shape and Multiple Course HMA Overlay	Do base conditions and staging of the job provide a uniform base to pave over? Have existing base, subbase and subgrade conditions been addressed?
Rubblize and Multiple Course Overlay	Do base conditions and staging of the job allow for uniform base to be paved over? Have any potential wet areas which could affect paving been addressed? Is pavement free of poor sections with excessive patching that can cause patches to break off and get punched down instead of being broken up during rubblization? Have existing base, subbase and subgrade conditions been addressed?
Unbonded Concrete Overlay	Are existing shattered areas repaired? Have existing base, subbase and subgrade conditions been addressed?
6-8" Aggregate lift with multiple course HMA overlay	Have existing base, subbase and subgrade conditions been addressed?

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CPM TREATMENT	EXISTING CONDITIONS
Crack Seal / Flexible Pavement	Is this the first crack treatment applied to the pavement? Is existing surface relatively new? 1-4 years? (Check for existing warranty.)
Crack Seal / Composite Pavement	Is this the first crack treatment applied to the pavement? Is existing surface relatively new? 1-2 years? (Check for existing warranty.)
Surface Seal	Does existing pavement have a good base? Does existing pavement condition fall within CPM guidelines for specified fix?
Functional Enhancements	Does existing pavement condition fall within CPM guidelines for specified fix?

RETURN

WARRANTY DESIGN AND EXECUTION

WARRANTY PROCESS OVERVIEW

- Roadway is identified as needing work during call for projects
- Check that the road is not currently under warranty
- Project fix is selected
- Warranty Decision Tree reviewed to determine if a warranty is right for that project

WARRANTY PROCESS OVERVIEW

- Warranty SP is included in the project, or if a warranty is determined to be inappropriate correct approvals are obtained
- Project is advertised and awarded
- SWAD is auto-populated with project level information
- Construction of warranted items is completed
- Initial acceptance form is filled out and signed by Contractor and Engineer

WARRANTY PROCESS OVERVIEW

- Initial acceptance date is entered into SWAD to start the warranty period and generate inspection dates
- Inspections are completed per the schedule and communications are sent to the Contractor and surety company
- If corrective action is required form letters are used with defined timeline to ensure that corrective action is completed in a timely manner

DESIGN CONSIDERATIONS

- Fix is selected for a specific road
  - Reconstruct – Are all subgrade conditions being addressed?
  - Rehabilitation – Fix-specific question and have all base, subbase and subgrade conditions been addressed?
  - CPM – Does the selection match CPM fix guidelines?
- If the answer is NO
  - May want to revisit the scope of work
  - May want to waive certain aspects of the warranty (requires the approval of the System Manager and the Statewide Warranty Engineer)
- If the answer is YES
  - Warranty the project unless project specifics justify not having a warranty (requires the approval of the System Manager and the Statewide Warranty Engineer
- In either situation
  - The warranty or portions of the warranty can be waived if surprises occur during construction
  - Include thorough documentation of problem areas and areas where warranty was waived

DESIGN CONSIDERATIONS

1. **Roadway Reconstruction**

- Unsatisfactory Subgrade – If known unsatisfactory subgrade conditions are not being addressed as part of the reconstruction work, the designer may want to waive warranty or specific condition parameters for segments of the job where conditions apply.

2. **Roadway Rehabilitation**

- *Repair or Mill Existing Pavement w/ Multiple Course HMA Overlay*
    - Adequate joint repairs on rigid and composite pavements
    - Adequate pavement repair, base failure, depressions, voids, etc.
    - Existing ruts removed and cause addressed
    - Existing subbase and or subgrade conditions addressed
- *Crush and Shape with Multiple Course HMA Overlay*
    - Base conditions/job staging provide a stable paving platform
    - Existing subbase and or subgrade conditions addressed
- *Rubblize and Multiple Course HMA Overlay*
    - Base conditions/job staging provide a stable paving platform
    - Pavement condition will accommodate proper rubbilization
    - Existing subbase and or subgrade conditions addressed
- *Unbonded Concrete Overlay*
    - Existing shattered areas repaired
    - Existing subbase and or subgrade conditions addressed
- *Aggregate Lift with Multiple Course HMA Overlay*
    - Existing subbase and or subgrade conditions addressed

DESIGN CONSIDERATIONS

3. CPM Treatment

A. *Crack Seal on Flexible Pavement*

- Is this the first crack seal application?
- Is the pavement surface relatively new? (1-4 years) (verify no existing warranty)

A. *Crack Seal on Composite Pavement*

- Is this the first crack seal application?
- Is the pavement surface relatively new? (1-2 years) (verify no existing warranty)

A. *Surface Seal*

- Does existing pavement have a good base?
- Do existing pavement conditions fall within CPM repair guidelines?

A. *Functional Enhancement*

- Do existing pavement conditions fall within CPM repair guidelines?

WARRANTY EXCEPTIONS

- The designer may want to waive the warranty or specific condition parameters for segments of the job. However, projects must include a warranty unless project specific circumstances justify omission. Justification can be related to existing site conditions or instances where warranty administration costs are excessive relative to project pavement costs. The decision to withhold a warranty from a project must have concurrence from the region and CFS staff.

- The omission of warranties from project design may create the need for increased inspection and or testing.

WARRANTY EXCEPTIONS

1. Other Pavement Repair Applications (NHRP).

2. New product application - question for CFS staff, normally we don't warranty new pavement designs or products where we don't have documented results for pavement performance. Check with CFS staff.

3. HMA mix types specified in Frequently used Special Provision 501-O WARRANTY WORK REQUIREMENTS FOR MULTIPLE COURSE HOT MIX ASPHALT OVERLAYS ON COMPOSITE PAVEMENT; MULTIPLE COURSE HOT MIX APSPHALT OVERLAYS ON FLEXIBLE PAVEMENT this special provision does not include the use of E1 or E3 mixes.

4. Small tonnage and short length projects.

If the decision is made to omit a warranty during project development, the designer may want to revisit the project scope. If the scope does not change, additional testing and inspection may be required.

DOCUMENT – DOCUMENT - DOCUMENT

QUESTIONS…