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Design Quality Assurance Bureau
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New York State Department of Transportation
ENGINEERING INSTRUCTION

EI 99-001

Title: **1R REQUIREMENTS — FEDERAL-AID SINGLE COURSE OVERLAY MAINTENANCE PAVING PROJECTS**

Distribution:
- ☐ Manufacturers (18)
- ☒ Main Office (30)
- ☐ Local Govt. (31)
- ☒ Regions/Agencies (32)
- ☐ Surveyors (33)
- ☐ Consultants (34)
- ☐ Contractors (39)
- ☐ _____( )

Approved:

Robert A. Dennison
Deputy Chief Engineer (Design)

1/20/99
Date

This EI does not supersede any older issuances.

Effective Date

This EI is effective immediately. In order to qualify for Federal-aid for single course overlays in State Fiscal Year 1999/2000, project site selection and review by the Safety Audit Team, as described below, should begin immediately. Selection of the appropriate safety work and completion of SAFETAP Report Form A, as described below, should be completed by March 31, 1999. 1R paving projects and/or safety work identified after submittal of the SAFETAP Reporting Forms on March 31st may be progressed within the same State fiscal year by submitting an amended SAFETAP Report Form A.

Purpose

The purpose of this EI is to identify the 1R Requirements for Federal-aid single course overlays and to transmit the following supporting information:

1. Requirements and Guidance For Safety Work.
2. SAFETAP Report Form Requirements.
3. Sample SAFETAP Report Form A.
4. Sample SAFETAP Report Form B.
5. Safety Screening, dated January 27, 1994.
6. Pavement Preventive Maintenance Projects Second Working Draft, dated February 12, 1993.

1.0 Background & Applicability

P. T Well's and C. A. Thomas' September 8, 1998 memo issued the Department's guidelines for the Safety Appurtenance Program (SAFETAP). SAFETAP is an initiative designed to ensure that safety considerations are incorporated into the Department's maintenance paving projects. SAFETAP requires a project review of maintenance paving sites by a team of qualified Department staff for the purpose of deciding upon safety work to be implemented before, at the time of, or soon after, construction.

The Federal Highway Administration (FHWA) has approved single course overlay Preventive Maintenance Paving (PMP) projects and Vendor in Place Paving (VPP) projects for Federal-aid, provided they meet the requirements of this EI. For simplicity, this EI will be referred to as the 1R Requirements. These requirements, in effect, take the place of the SAFETAP Guidelines in order to make PMP and VPP projects eligible for Federal-aid.

The SAFETAP Guidelines remain in effect for 100% State funded maintenance paving projects, including PMP and VPP projects. However, all PMP and VPP projects meeting the 1R Requirements in this EI are eligible for 100% State as well as Federal funding. This will allow greater flexibility in the fund source.

1.1 Responsibility

- Responsibility for the implementation of this program is shared among the Design, Traffic, Maintenance, Planning, and other groups within each Region, as determined by the Regional Director.

- Decisions regarding the disposition of the Safety Audit Team recommendations for work that is practical and necessary to address existing or potential safety problems, as discussed in Sections 2.1 and 2.3 of this EI, reside with the Regional Director. (Note: Safety work needed to avoid degrading safety that will not be accomplished shall be treated as a non-standard feature in accordance with Highway Design Manual (HDM) Section 2.8 and the TEA-21 matrix in the Design Procedure Manual (DPM).)

- The responsibility for programming and/or scheduling the implementation of safety work, as discussed in Section 2.4 of this EI, resides with the Regional Director.

- Program reporting, as defined in Section 2.5 of this EI, is the responsibility of the Regional Traffic Group, unless the Regional Director decides to assign it to another Regional Group.

2.0 Requirements

The 1R Requirements are based on the Safety Appurtenance Program Guidelines (SAFETAP) and the attached Pavement Preventive Maintenance Projects Second Working Draft and Safety Screening. As the SAFETAP Guidelines apply only to 100% State funded maintenance paving projects, this EI takes the place of the SAFETAP Guidelines for Federal-aid single course overlays. This EI also modifies or clarifies the attached documents by adding the following 12 requirements.

- The project must be competitively let and the work by State forces cannot be an integral part of the contract for the paving work (e.g., State forces doing the M&PT work for Vendor In-place Paving).

- Vendor in Placing Paving (VPP) projects let by the Office of General Services (OGS) must meet all Federal-aid contracting requirements. The Regional Maintenance Group or the Main Office Maintenance Division should be contacted to determine the general requirements for VPP projects.

- Work done by State-forces is not eligible for federal-aid.

- Overlays are limited to a single course with a maximum thickness of 50 mm. Multiple course federal-aid resurfacing projects shall be progressed as 3R projects in accordance with the DPM and HDM Chapter 7.

- The existing pavement must have a pavement surface condition rating of 6 or greater. Exceptions must follow the pavement treatment selection in EI 92-015 Project Level Pavement Selection Process and be approved on a case by case basis by the Regional Director.

- Truing & leveling is to be used at spot locations to remove irregularities in the old pavement, fill and patch holes, correct variations in banked pavement, establish pavement crowns and for the terminations of the overlay as noted in HDM Section 3.3.1. Truing and leveling is not to be used over substantial lengths of the project to effectively increase the overall maximum overlay thickness or add a second pavement course. Wheel ruts are to be filled with a shim course or top course material. The intent is to fill ruts to improve surface drainage and allow adequate compaction of the overlay without adding a second Hot Mix Asphalt (HMA) course.

- Milling of 50 mm or less may be performed for the traveled way or traveled way and full depth shoulders to maintain the existing surface elevation. Reasons for milling include: maintaining vertical clearances, maintaining proper barrier heights, maintaining curb height for drainage, and replacing a poor top course on a sound pavement structure.

- The overlay must extend the full width of the paved roadway (travel lanes & paved shoulders) unless milling is performed as noted above and the paved shoulders, if any, are in satisfactory condition.

- The Safety Audit Team must inspect each site as outlined in Sections 2.2 and 2.3 of this EI.

- The non-pavement work must be performed in accordance with Sections 2.1 and 2.4 of this EI.

- A report is prepared in accordance with Section 2.5 of this EI.

- The contract is not restricted to the 10 contract items as stated in Attachment 6.

2.1 Safety Treatment Criteria

Safety work that meet either of the following criteria are to be implemented under the 1R Requirements:

- the safety treatments are necessary to avoid degrading safety, or
- the safety treatments are practical and necessary to address existing or potential safety problems.

The safety work is to be identified by completing a safety audit, as described below.

2.2 Site Selection

During the early summer months, the Regional Maintenance Group together with the Regional Planning and Program Manager and the Regional Pavement Manager decide on locations that are to be progressed under the 1R Requirements in order to qualify for Federal-aid.

2.3 Safety Audit Team

Before or during the site selection, the Regional Director should assign one or more experts from each of the Regional Traffic, Design, and Maintenance Groups, and any other Regional Groups he or she determines to be appropriate, to become part of a Safety Audit Team. The Safety Audit Team should review the selected sites soon after project selection, to ensure that adequate plans can be made for any superelevation work to be included in the project.

The team will perform a simple analysis of site related computerized accident data, examine the sites selected, and make recommendations for safety work. Safety work, as described below, that meets the criteria in Section 2.1 above should be recommended by the Safety Audit Team, and should be decided/scoped at the time of the on-site inspection. Requirements and guidance for conducting a Safety Audit and preparing the subsequent safety work are included in Attachment 1.

2.4 Type and Timing of Safety Work

This section includes a list of typical safety work with the timing of when the work should be accomplished. Ideally, the safety work should be done before or immediately following the paving work in order to minimize the public's exposure to existing or potential safety problems. However, scheduling the work requires consideration of:

- the need to mitigate accident problems,
- the potential for future accidents,
- the extent and complexity and staging of the work involved,
- impacts of winter shutdowns, and
- contractor or State force availability.

Therefore, while the list of safety work below contains general time frames, the most critical safety needs should be addressed earlier. Additionally, safety work, such as brush removal, clearing and grubbing, may be completed before the paving operation, as appropriate.

Note that implementation of the safety work items identified by the Safety Audit Team and approved by the Regional Director are to be programmed and/or scheduled and reported on the SAFETAP Reporting Form A as required by Section 2.5 of this EI. The work may be accomplished as part of the paving contract, separate contract(s), by State maintenance forces, or by others under a highway work permit.

To be done *before* the paving contract, as required

- Replace missing regulatory or warning signs as noted by the Safety Audit Team.

To be done *during* the paving contract, as required

- Superelevation
- Shoulders
- Interim treatment for edge of pavement drop-offs shall be provided in accordance with Section 619-3.01 G.3 of the NYSDOT "Standard Specifications" and shall continue until the edge drop-offs are corrected.

To be done, *during* or *as soon as possible* following completion of the paving contract, as appropriate (i.e., The safety work should normally be completed within 2 months of the paving work, unless otherwise specified. As an exception, safety work needed to supplement paving work completed near the end of the construction season may be deferred to the first couple of months in the following construction season if its completion within 2 months is impractical. Pavement markings, regulatory signs, warning signs, critical guide rail, and other work to mitigate an accident problem are not included in this exception.)

- Pavement markings (refer to specifications and current EI's for timing).
- Rumble strips.
- Back-up shoulders to eliminate edge drop-offs.
- Additional/updated regulatory, advisory and warning signs not addressed above (generally within 2 months).
- Brush removal, clearing and grubbing.
- Fixed objects: remove, modify, relocate, delineate, or protect by guide rail.
- Guide rail:
  - ✔ reset guide rail that is or will be at the improper height.
  - ✔ replace severely deteriorated and non-functional guide rail.
  - ✔ replace severely substandard guide rail and connections to bridge rail (e.g., concrete post/cable or railroad rail post/cable).
  - ✔ install guide rail if missing or not extending to the point of need if a serious hazard, such as a cliff, deep body of water or liquid fuel tank is exposed and there is a reasonable expectation that vehicles will reach the hazard.
  - ✔ restore guide rail deflection distance through clearing and grubbing.
- Delineation.

To be done in a *timely manner* following the completion of paving (i.e., within 18 months of the paving work)

- Guide rail not addressed under the "as soon as possible" work noted above.
- Replace any missing or damaged reference markers.
- Fixed objects which cannot be practically addressed as soon as possible.
- Install guide signs/route markers, if needed.
- Any other features of concern that are judged to meet the criteria outlined in Section 2.1 of this EI.

2.5 SAFETAP Reporting Requirements

In accordance with the need to monitor the effectiveness of the 1R Requirements, the SAFETAP Reporting Forms A and B, as detailed in Attachment 2 and shown in Attachments 3 and 4 must be completed each year. The completed SAFETAP Reporting Forms are to be sent to the Safety Program Management Bureau by the end of the State Fiscal Year (March 31st) for the scheduled and completed maintenance resurfacing projects. (Note that the yearly submission of the SAFETAP Forms should also include the 100% State funded projects, as required by the Safety Appurtenance Program Guidelines.)

1R paving projects and/or safety work identified after submittal of the SAFETAP Reporting Forms on March 31st may be progressed within the same State fiscal year by submitting an amended SAFETAP Report Form A.

2.6 Records Retention

As a minimum, the project files relating to the safety audit and the safety work performed should be retained by the Region until the next time the project limits are resurfaced or pending litigation is resolved.

Contacts:

Design related questions regarding this EI should be directed to your Regional Quality Control Engineer. Further questions may be directed to the Main Office Safety Program Management Bureau or your Regional Liaison Engineer in the Design Quality Assurance Bureau.

ATTACHMENT 1
REQUIREMENTS AND GUIDANCE FOR SAFETY WORK
(Page 1 of 2)

Project Location & Limits	Route = From = To = Municipalities =	
Safety Audit Team Members & Regional Program Areas	Design = Traffic = Maintenance =	
Date		

✔	Element	Guidance	Comments
	Signing	• Signs should be installed as needed in accordance with the NYS MUTCD. • Immediately notify the Resident Engineer of any missing regulatory or warning signs.	
	Superelevation	Consult Figure 231-1 of the NYS MUTCD. Identify any current conditions which meet the criteria in Section 2.1 (i.e., curves where it is determined that existing operating speeds are now causing, or may in the future cause, vehicles to travel off the roadway or cross the centerline.) Sharp horizontal curves may be ball banked to help determine the need for additional superelevation. Existing superelvation should not be reduced unless excessive (>8%) and causing a safety problem. Where the superelevation will not be improved to the minimum required for the speed limit, install advisory speed signs and consider additional treatments (e.g., chevrons, roadside clearing, etc.)	
	Shoulder Resurfacing	Consider paving unpaved, stabilized shoulders based on the need to reinforce the edge of the traveled way, accommodate bicyclists or treat safety considerations.	
	Rumble Strips	On rural, high speed facilities (55 mph & 65 mph) consider in accordance with HDM §3.2.5.4.	
	Pavement Markings	Pavement markings should be installed in accordance with the NYS MUTCD. The adequacy of existing passing zones should be evaluated. Current EI's and specifications must be followed.	

✔	Element	Guidance	Comments
	Sight Distance	Trim vegetation to improve substandard intersection sight distance, and horizontal and vertical stopping sight distance. • Intersection Sight Distance - HDM § 5.10.5.1 A • Passing Sight Distance - HDM § 5.8.2.2 • Horizontal & Sag Vertical SSD - HDM Chapter 2 and HDM § 5.8.2.1	
	Fixed Objects	Based on the criteria in Section 2.1 of this EI, remove, modify, relocate, delineate, or protect by guide rail any fixed objects that require remediation due to existing or potential safety implications (e.g., tree removal on the outside of a curve or installation of traversable driveway culvert end sections on the outside of a curve). The Safety Audit Team should determine the timing of the work based on the work involved, accident data and accident potential. For guidance on identifying fixed objects, refer to HDM §10.3.1.2 B.	
	Guide Rail	The following should be used to evaluate the need for guide rail and other roadside work. • HDM Section §10.2.2.1 - point of need • HDM Table 10-7 - acceptable guide rail height • HDM Section §10.3.1.2 B - guidance on determining severely deteriorated guide rail and non-functional guide rail • HDM Section §10.2.2.3 and Table 10-3 - barrier deflection distance • HDM Section §10.2.2 - design of new guide rail	
	Bridge Rail Transitions	The Regional Structures Group, Regional Design Group, SDCD and DQAB should be contacted, as necessary, to help identify substandard connections to bridge rail and for the recommended treatment.	
	Delineation	Delineation should be installed in accordance with the NYS MUTCD	
	Other		

ATTACHMENT 2
SAFETAP Reporting Form Requirements

SAFETAP Reporting Form A (see Attachment 3):

1. A listing of all sites selected for maintenance paving. This includes:

   - Preventive Maintenance Paving Projects using the 1R Requirements (Federal-aid),
   - Vendor in Place Paving using the 1R Requirements (Federal-aid),
   - Vendor in Place Paving with 100 % State funds,
   - Resurfacing by State forces with 100 % State funds, and
   - Simplified Maintenance Contracts with 100 % State funds using the Pavement Preventive Maintenance Projects Second Working Draft.

   This listing should include the beginning and ending reference marker for each site.

2. The fund source (i.e., Federal-aid or 100% State funded).

3. A brief description of the safety work recommended by the Safety Audit Team for each site. Safety work needed to avoid degrading safety shall be explicitly identified as such.

4. An accounting of the disposition of those recommendations. If any recommendations for safety work practical and necessary to address existing or potential safety problems are not approved for implementation, an explanation should be given for that decision. (Note: Safety work needed to avoid degrading safety shall be treated as a non-standard feature in accordance with HDM Section 2.8 and the TEA-21 matrix in the Design Procedure Manual if not addressed.)

5. The scheduled timing of when the paving and related safety work will be (or was) accomplished.

SAFETAP Reporting Form B (see Attachment 4):

1. A listing of all sites paved. This listing should include the beginning and ending reference marker for each site.

2. The fund source used for the paving work.

3. The year and month during which the paving was done, and the year and month during which the safety recommendations were implemented.

4. The improvements made and the date when they were completed or scheduled to be completed, in accordance with Section 2.4 of this EI.

ATTACHMENT 3
SAMPLE
SAFETAP REPORTING FORM A
RECOMMENDATIONS
State Fiscal Year _____ Prior to Maintenance Paving Work

MAINTENANCE PAVING PROJECTS TO BE IMPLEMENTED IN NEXT SFY

1R Site		Fund Source	Team Recommendation * = Need to avoid degrading safety	Regional Approval or Disapproval	Reason(s) if Rejected	Scheduled Completion Date
Beg. RM	End. RM					
1. 24 0303 1101	1141	Federal				April, 1999
1122	1122		Superelevation	Disapprove	1. Insufficient ROW 2. Curve sign and delineation should address the problem	N/A
1121	1121		Curve Warning Sign	Approve		May, 1999
1121	1123		Post Mounted Delineators	Approve		May, 1999
1134	1134		Guide rail Replacement	Approve		June, 1999
2. 27 0304 2104	2139	State				July, 1999
2113	2115		Chevrons	Approve		August, 1999
2122	2124		Guide rail removal	Approve		September, 1999
2133	2133		Transition to bridge rail	Approve		September, 1999
3. 24 0303 1155	1190	Federal	No recommendations	N/A		October, 1999

ATTACHMENT 4
SAMPLE
SAFETAP REPORTING FORM B
COMPLETED SAFETY IMPROVEMENTS

1R Site		Fund Source	Resurfacing Complete	Improvements	Completion Date Month/Year
Beg. RM	End. RM				
1. 25 0303 1101	1161	State	May, 1999		
1137	1138			Post Mounted Delineation	June, 1999
1148	1149			Post Mounted Delineation	June, 1999
2. 25A 0302 1068	1087	Federal	June, 1999		
1077	1078			Superelevation	June, 1999
3. 27 0304 1139	1146	State	July, 1999		
1141	1143			Guide Rail Replacement	October, 1999
4. 101 0301 1004	1012	Federal	May, 1999		
1006	1008			Chevrons	August, 1999
1010	1011			Chevrons	August, 1999

January 27, 1994

PREVENTIVE MAINTENANCE SAFETY SCREENING

The Department's February 12, 1993 transmittal of procedures for Pavement Preventive Maintenance projects includes requirements for a safety screening. The following is a description of that screening process. The screening is intended to identify any candidate projects that have a potential to increase run-off-the-road accidents as a result of a simple resurfacing. Candidate projects should be submitted to the Regional Traffic Engineering and Safety Group for additional safety analysis if either of the following two conditions are met:

1. The candidate project location appears on the Department's Preventive Maintenance Screening list. This list identifies locations experiencing high run-off-the-road accidents. It will be forwarded each year to Regional Traffic and Safety Groups for distribution to other appropriate Regional Groups when the standard Priority Investigation Location (PIL) listings are issued.

2. It is determined by the Regional Maintenance Engineer in consultation with the Regional Traffic Engineer that speeds or run-off-the-road accidents are likely to increase following a simple resurfacing. Of particular concern, in this regard, would be any proposed projects containing pavement sections that have a sufficiency score lower than 6.

Following the Regional Traffic Engineering and Safety Group's additional safety analysis, the Region has three options:

1. Proceed with the project with the addition of simple, low cost remedial safety improvements which can be accomplished by Highway Maintenance either before the project is undertaken, or as part of the project.

2. If simple, low cost remedial measures are believed to be insufficient to address the safety concern, develop a capital project proposal for inclusion in the Regional GOP. In addition, an interim preventive maintenance plan for the project site must be developed in conjunction with the Regional Traffic Engineer, and documented for the record, for the period prior to the implementation of the proposed capital project. The interim preventive maintenance plan may include the installation of low cost safety improvements and simple resurfacing to protect the capital asset until the capital project is scheduled for completion.

3. If it is determined that a capital project would be inappropriate, and all appropriate low cost safety improvements have been installed at the project site, document the decision and proceed with the project as a simple

Preventive Maintenance resurfacing project.

The underlying assumption of the safety screening process is that resurfacing together with new striping could under certain circumstances have the potential to increase run-off-the-road accidents, particularly at locations which are already experiencing high rates of run-off-the-road accidents. This potential is particularly pronounced at locations where pavements are being upgraded from poor to good or excellent conditions, and where speeds are likely to increase. Since the Preventive Maintenance Program is intended to resurface pavements in fair condition, speeds are generally not expected to increase on the majority of Pavement Preventive Maintenance projects.

However, if a run-off-the-road accident problem exists prior to resurfacing, or, if in the judgement of the Regional Maintenance or Traffic Engineer, speeds are likely to increase following resurfacing, then remedial measures should be undertaken either as part of the Preventive Maintenance Project, or as part of a scheduled Capital Project. Only when all appropriate low cost safety improvements already exist and perform properly at the project site, and a Capital Project is considered inappropriate, should such a location be resurfaced with a Preventive Maintenance Project without safety treatments.

February 12, 1993

SECOND WORKING DRAFT

This purpose of this document is to provide Regional guidance in accomplishing an expanded Pavement Preventive Maintenance (P.M.) program. It updates and supersedes the process described in the First Working Draft, October 26,1992 based on comments received from regions and main office groups.

GENERAL PROCESS

The intent of this program to take preventive maintenance actions that will slow the deterioration of the pavement, thereby prolonging its service life. In general, preventive maintenance projects will follow the "Group A Maintenance Projects" category of the project management process. The project management process for these simple preventive maintenance projects is shown in Appendix A. This process is similar to that shown in Figure 2 in the Procedure for Managing Projects. The Pavement Preventive Maintenance Project Development Process is shown in the attached flow diagrams which start with all pavement management activities and end with implementation. The General Process is shown in Appendix B and the Detailed Process is shown in Appendix C. The process for Pavement Preventive Maintenance Projects is divided into the same project management process steps as shown in Appendix A.

Program Development and Project Identification includes Pavement Management Activities, Problem Identification, a Preliminary Safety Review, development of a Pavement Preventive Maintenance Program and preparation of Initial Project Proposals (IPP) for proposed projects on the program. Once IPP's are drafted, they are used to evaluate potential projects and to select projects through the approval of the IPP, for the program.

Project Scoping and Preliminary Design includes a review of the IPP by Regional Groups, the preparation of a Scope Summary Memorandum (SSM) or Expanded Project Proposal (EPP) as appropriate, necessary preliminary design, and design approval. The SSM is expected to be used for all pavement preventive maintenance projects.

Project detailed design will follow either the Standard Procedure or the Simple Procedure depending on the complexity of the project.

Note that the process uses one document which is progressively further detailed, updated and reaffirmed throughout the production process.

Finally, Implementation will be by State Forces or by contract as resources and project complexity allow.

DETAILED PROCESS

The Pavement Preventive Maintenance Project Development Process and guidelines is described below. The numbers refer to the numbered boxes and diamonds shown on Appendix C. The rectangles represent various activities and the diamonds represent decisions.

Program Development and Project Identification

(1) The Resident Engineer (RE) is designated as the primary pavement manager for those highways in the residency and continually undertakes pavement management activities on State highways within the residency jurisdiction.

(2) In exercising responsibilities described in the Pavement Management System the RE will identify pavements which are in need of some type of treatment. Pavement sections should have a sufficiency score which is equal to or less than 8 and a work history which indicates that the guidelines in Table 1 have either been met or can be justified by a Life Cycle Cost Analysis.

If the pavement is not in need of work, the RE will reconsider the pavement section in subsequent pavement management activities (1).

(3) If the pavement section is in need of work, the RE decides if the section is a candidate for preventive maintenance based on the guidelines in Table 2.

If more extensive work beyond simple preventive maintenance is warranted on the pavement section, such as rehabilitation, the RE will submit a draft IPP through the Regional Highway Maintenance Engineer (RHME) to the Regional Program and Project Manager (RPPM) for consideration by the Regional Director in the preparation of the 5 Year Program Update and subsequent addition to the Regional Program.(9)

(4) If the project is a preventive maintenance project but not a single course overlay, the RE will consider the project in the development of the Residency Preventive Maintenance Program. (8) If the project is a single course overlay, then a Safety Review is necessary. If speeds are not expected to increase significantly following resurfacing, only a limited screening for run off the road accident problems is required. (5) If, for any reason, operating speeds are expected to increase significantly on a candidate section of highway, e.g. on a pavement surface score of 5, a more thorough analysis should be conducted by the Traffic and Safety Engineer to determine if additional safety countermeasures may be necessary. (6)

5) The RE conducts a preliminary safety review by checking to see if the pavement section appears on a safety screening list supplied by the Regional Traffic

TABLE 1 CYCLES OF PREVENTIVE MAINTENANCE
GENERAL GUIDELINES *

Flexible or Overlaid Pavement

Armor coat - last work performed 12 or more years.

Crack and joint filling - last work performed 4 or more years.

Rigid Pavement

Crack and joint sealing - last work performed 8 or more years.

Shoulder surface treatment - last work performed 4 or more years.

All Pavement Types

Ditch cleaning - last work performed 10 or more years.

* Exceptions to the guidelines found in Tables 1,2 or 3 can occur with proper documentation in the IPP. For example, exceptions are appropriate when emergency paving or treatment is needed to prevent pavement failure.

Engineering and Safety Group. (The Safety Screening List will not be available for projects designed for the 93/94 program, but will be available for future programs.) This list will include those sections which have a sufficiency score of 6 or 7 and fail either of the following criteria (exact criteria subject to change following periodic performance evaluation):

A. Have experienced 16 or more accidents/mile during the latest three year period for which the Department has accident data AND have experienced a high proportion of run off the road (ROTR) accidents compared with total accidents (40 per-cent or more).

B. Have experienced a cluster of 3 or more ROTR accidents at any reference marker(s) within the pavement section during the last three years for which the Department has records.

TABLE 2 - GUIDELINES FOR PAVEMENT SECTIONS NEEDING PREVENTIVE MAINTENANCE

Surface Rating	Dominant Distress/s	Treatment Strategy
Rigid Pavements		
8	N or S_1	Joint and Crack Filling
7	N	Joint and Crack Sealing
	S_1	Joint and Crack Sealing w/Spall Repair
Overlaid Pavements		
8	NA	Joint and Crack Filling
7	N or W	Joint and Crack Filling or Skim Patch
	A_1	Joint and Crack Filling or Skim Patch
	A_2	Single Course Overlay, or Surface Treatment
6	N or A_1	Single Course Overlay
Flexible Pavements		
8	NA	Joint and Crack Filling
7	N	Joint and Crack Filling
	A_1	Single Course Overlay
	A_2	Single Course Overlay
6	N or A_1	Single Course Overlay

Distress Table

Dominant Distresses	Code
Spalling, Isolated	S_1
Spalling, General	S_2
Faulting	F
Alligator Cracking, Isolated	A_1
Alligator Cracking, General	A_2
Widening Dropoff	W
No Dominant Distress	N
Not Applicable	NA

NOTE: Exceptions may be made to the above guidelines in extraordinary circumstances with the approval of the RHME.

The listing will identify each pavement section which fails the screening tests by beginning and ending reference markers and will be grouped by residency within each region.

If the project does not appear on the Safety Screening List, the RE will consider the project in the development of the Residency Preventive Maintenance Program. (8)

If the section does appear on the Safety Screening List, the RE will formally submit the project to the Regional Traffic Engineer (RTE) for a further safety review to address ROTR accidents. (6)

(6) For those projects which either appear on the Safety Screening List or are referred to the Regional Traffic Engineering and Safety Group (TE&S) by the RE, TE&S will conduct a safety review to address ROTR accidents. The safety review should involve the following:

- A review of the Department's Statewide Accident Surveillance System (SASS) Verbal Description Report for the subject location.
- A review of individual Accident Reports, if necessary.
- An on-site accident investigation at the project location, if deemed necessary by the RTE.

(7) If, as a result of TE&S's review, it is determined that ROTR accidents could be addressed with simple corrective action, such as improved signing, the RTE will advise the RE of the appropriate action, if any, to be taken to ameliorate ROTR accidents. The RE will consider the project in the development of the Residency Preventive Maintenance Program along with the Traffic Engineer's recommendations.(8)

If, as a result of TE&S's review, it is determined that an action is necessary beyond the scope of Maintenance, the RTE will provide sufficient information to the RE. The RE will prepare a draft IPP for the subject section to address the safety concerns from (6) and the preventive maintenance from (1) to the RHME for submittal to the RPPM for consideration by the Regional Director in the preparation of the 5 Year Program Update and subsequent addition to the Regional Program. (9).

(8) The RE prepares the Residency Pavement Preventive Maintenance Program from the needs identified from steps (4), (5), and (7) within the resources available to the residency as allotted by the RHME. A preliminary determination is made whether the project will be undertaken by state forces or by contract by the RE and the RHME considering the factors in Table 3. The resulting decisions of state versus contract work may be different from Residency to Residency and from Region to Region. The RE prepares draft Initial Project Proposals (IPP) for all

TABLE 3 GUIDELINES TO BE CONSIDERED FOR WORK TO BE DONE BY STATE FORCES

Guidelines to consider for all work

- Maintenance and protection of traffic requirements
- Logistics
  - Distance from Residency
  - Material delivery
  - Regional equipment movement requirements
- Maximization of resources
- Workload
- Other factors
  - Overhead and underground utilities
  - Guiderail
  - Curbs
  - Drainage
  - Geometrics
  - Pavement markings

Guidelines to consider for specific work types

- Single course overlay
  - IUOE asphalt concrete tonnage limit
  - Project length
  - Preparatory and follow up work required
  - Existing pavement surface
- Crack and joint filling
  - Existing pavement surface
- Ditch cleaning
  - Special equipment required

projects on the proposed program for the residency.(9)

(9) Projects identified to be done by contract will require an individual draft IPP for consideration by the Regional Director and RPPM. Projects to be done by state forces may be "batched" into larger draft IPP's, by type. For example all crack filling projects may be included in one draft IPP, and all paving by state forces into another.

Appendix D is a sample of the documentation which is updated as the project progresses. It is intended that this document serve as the IPP, SSM, CSSQA, and