basically
Minor Rehab (stop Gap)

GUIDELINES FOR SELECTING PROJECTS FOR MAINTENANCE CONTRACT WORK

jobs beyond capability of local forces

JUNE 1983

PREPARED
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HIGHWAY DIVISION

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Iowa Department of Transportation

CONTRACT PROCUREMENT
OF
MAINTENANCE MATERIALS & REHABILITATIVE SERVICES

The Highway Division, through the Offices of Maintenance, Contracts, Purchasing & Inventory and the District Offices, develops annual programs for procurement by formal contract of maintenance materials such as shoulder aggregate, asphaltic materials, chemicals, etc., and rehabilitative services such as bridge painting, pavement patching, sealcoating, resurfacing, etc. In addition, small quantities of materials and services may be purchased directly as set out in PPM 010.14.

Material needs are identified by field offices, Residency and District, and approved for contract by Offices of Maintenance and Purchasing and Inventory. Aggregate, and asphaltic concrete, quantities are assembled and prepared for letting through the Office of Contracts by the Office of Maintenance. Other material quantities such as asphaltic road oils, patching premix, chemicals, signs, posts, etc, are assembled based on field estimates and requests, and prior usage history and are let to contract through the Office of Purchasing and Inventory. These items, depending on type, storage requirements, and usage, are often purchased on continuing yearly contracts. Delivery of materials let under these contracts is authorized by Purchase Orders.

Contract rehabilitative service needs such as bridge painting, pavement patching, sealcoating, and thin layer resurfacing are identified and prioritized by the Districts. The Office of Maintenance, after field reviewing the candidate projects, assembles the project data and arranges for contract letting through the Office of Contracts. Funding is provided through

a special cost center (6500) that is established jointly by the Highway Division and Planning Division (Office of Program Management). The amount requested for this program element is determined from preliminary estimates developed by the District Offices and the Office of Maintenance. The final allocation is approved by the DOT Commission yearly as part of the planning and programming process.

The selection and prioritization of candidate projects is initiated in the field offices. The "system preservation concept" emphasizes preserving capital investments, traffic services and safety, and maintenance cost/effort containment. Central Office review of the program is coordinated by the Office of Maintenance which draws on the expertise contained in the Offices of Road Design, Bridge Design, Construction, Materials and Contracts. Contract administration and inspection are handled as set out in the code and DOT policies which govern all construction and maintenance project work.

OFFICE OF MAINTENANCE

GUIDELINES FOR SELECTING PROJECTS FOR MAINTENANCE CONTRACT WORK

Major interstate work should not be included in this program but should be submitted as 4R projects.

I. Bridge Painting and Repair

A. Bridge Painting - Paint bridge steel before there is any significant section loss due to rusting.

B. Bridge Repair - Minor strengthening, damage repair, etc. may be included in this program.

II. Pavement Surface Rehabilitation

A. Surface Patching:

This type of work may be considered for heavily "D" cracked P.C.C. Pavement and other deteriorated pavements where spalling has not reached the point where full depth repair or resurfacing is warranted and where the work is beyond the capability of the local crew.

B. Full Depth Repair:

Contract work is appropriate when the quantity is beyond the capability of the local crew. Full depth repair projects should be

grouped if possible to provide a basis for competitive bidding. Individual projects should not be let if the quantity is less than 150 to 200 SU. The measurements should result in the removal of all unsound concrete.

The cause of the failures should be ascertained and corrected as part of the contract. Refer to the following checklist:

Wet subgrade:

Clean ditch (local crew)

Pavement edge drain

Patch drainage

Settlement:

Check for need of culvert or tile repair (local crew)

Pressure:

Clean and seal contraction joints

Install pressure relief joints

On A.C. Resurfaced P.C.C. Pavements:

Specify full depth asphalt

Repair full width for uniform section and pressure relief

4 foot minimum width does not apply to full depth A.C. patches

C. Pavement Edge Drains:

Edge drains should be considered through areas where wet subgrade may be causing pavement cracking, instability, frost heaves and settlements. They should normally be placed 4' deep at the edge of the pavement and in accordance with current Road Design standards.

D. Pressure Relief Joints:

P.R. joints should not be cut unless there is real evidence of excessive pressure. One blow-up per mile may be evidence of excess pressure. Excessive pressure can also usually be detected in pavements where pressure is causing joint spalling at the contraction joints. Do not install pressure relief joints in AC or AC resurfaced roads, except at bridge ends. Consideration should be given to cutting pressure relief joints by contract at bridge ends when recutting is necessary and the concentration of bridges makes a contract worthwhile.

E. Pavement Milling:

This work may be appropriate for ACC Pavements where low friction numbers or wheel rutting are present on a highway with a high wet weather accident experience. The pavement structures must be adequate and the surface must be in generally good condition. Fog seals, seal coats or slurry seals may be warranted after A.C.C. surfaces are milled.

F. Pavement Joint and Crack Filling:

Portland Cement Concrete pavement should be considered for contract joint sealing when the original joint sealer has failed and the work is beyond the capability of the local crew. Asphaltic concrete pavement cracks should be considered for contract filling when the work is beyond the capability of the local crew. No concept has been developed to seal and level cracks that have deteriorated to the point that settlement has occurred or secondary cracks have become evident.

G. Fog Seals:

Fog seals should be considered where minor raveling and surface checking are evident on asphalt surfaces.

H. Seal Coats:

These are normally limited to asphalt surfaced highways with less than 1000 vehicles per day. Sealcoats may be used to rehabilitate asphalt paved shoulders. They should be considered where raveling, excessive cracking, or a polished surface that reduces pavement friction conditions have developed.

I. Slurry Seals:

No maximum ADT has been set for slurry seals except that with very high traffic they do tend to wear through quite rapidly. These should be considered where raveling, excessive cracking, or slippery surfaces have developed. They may be used to correct minor wheel rutting problems, ACC paved shoulder drop offs and deterioration.

J. One Inch Overlay:

The pavement structure must be adequate. Wheel rutting should be less than 1/4". One inch overlays may be considered for a dry, raveled surface, for correcting slippery pavement conditions or for correcting minor surface cracking. It will smooth out the ride. One inch overlays should not be considered for Portland Cement Concrete surfaces. Project proposals for one inch overlays should include all necessary surface and full depth pavement repair.

K. Heater Scarification Plus 3/4" New Material:

The pavement structure must be adequate. This type of work will correct wheel rutting up to 3/4". It will correct a moderate amount of cracking and surface deterioration and improve pavement friction. Include the necessary full depth and partial depth repair and crack filling with this work. This concept is not suitable for badly oxidized, low penetration AC-asphalt surfaces.

L. Overlays in excess of one inch can be considered for funding if limited to short areas (normally 600 feet or less in length). It is suggested that they be used where short stretches of highway need strengthening, leveling or where a thicker overlay will eliminate the need for excessive full depth patching through short areas.

III. Shoulder Rehabilitation

A. Asphalt shoulders should be fog sealed when the surfaces become dry. Fog seals shouldn't be considered if excess raveling or breakup has

occured. They can be placed on shoulders that are flush with the pavement surface.

B. Asphalt shoulders may be seal coated to correct raveling and cracking problems. Shoulders should be about 1/2" low to accommodate seal coats and not cause drainage problems. Strip seal coats may be required if the shoulders are more than 1/2" low.

C. Slurry seal asphalt shoulders in lieu of the seal coat if the shoulders are between 1/4" and 1/2" low. This will correct dry raveled surface conditions with minor cracking problems. They will also correct pavement edge drop offs and will fill cracks between shoulders and the pavement. The width of the slurry seal may vary depending on the shoulder condition from a minimum of 12 inches wide to full width.

D. Full depth repair of asphalt shoulders can be included if beyond the capability of the local crew. Large projects (quantities) are to be considered in the Interstate 4R program.

E. Granular shoulder material can be replaced when it is no longer practical to blade existing material up to fill the edge rut and if it is beyond the scope of the local capability. We should normally not blade granular shoulder material in to the extent that it causes excessive shoulder surface slopes. Material should be added by the local crew as needed to correct minor problems as part of routine maintenance operations. Cross sections should be obtained (not less

than 1/mile) to insure accurate quatities are provided for the estimates.

IV. Maintenance of Primary Road Extensions and Institutional Park Roads

A. Primary highways within the corporate limits of cities should be reviewed and included in the maintenance program. These can be submitted as MP projects or they can be added to the maintenance agreement with the city by a supplemental agreement.

B. Institutional and state park roads may be included in this program. These projects need not be listed in the priority sequence with the other work within the district. They are to be prioritized separately and funded from the Parks and Institutional Road Fund.

V. Interstate Sign Refurbishment

A. Evaluation:

Type B signs which are greater than 7 years old should be monitored frequently to determine replacement needs. Retro-reflectometer readings of 50% of new value are an indication that replacement will be required in the near future. Cracking of background surface visible from 30' or more in daylight is evidence of poor serviceability. Signs with physical damage such as dents, bent sections, bullet holes, etc. shoulder be considered for replacement. Nighttime checks which reveal that the legend is not uniform and clear from a readable distance indicate the need for replacement.

B. Procedures:

When recommending contract sign replacement, all type B signs needing refurbishing on a section of roadway should be replaced at one time. Generally, projects should include entire sections as they were originally installed or reconditioned. Type B signs on ramps and sideroads should be included in refurbishing projects.

C. Miscellaneous:

When recommending a contract sign refurbishing project, the size of panel and content of legend should be reviewed for any necessary changes to conform with standards. Some original signs may be downgraded in size. Mountings should be reviewed for modification such as breakaway design, setback from roadway and conversion to smaller wood signs.

VI. Miscellaneous Items

A. Miscellaneous types of maintenance work may be let to contract if found to be cost effective and/or beyond the capability of local maintenance crews and budgets. Contract work performed outside the shoulder line will be funded from the local budget. Proposals for this type of work should be developed for specific needs as they are identified.

VII. Project candidates for contract work are to be submitted on one of the two attached forms, with all appropriate information to be included.

Office of Maintenance
Project Data Sheet

District _____ Major (Development) _____ Minor _____ Date _____

Route _____ County _____ County No. _____ Service Level _____ Traffic _____

Location _____ Width _____ Length _____

Type of work _____ Work Code _____ Residency _____

Pavement History: (Surface Restoration Only)

Sub base _____ Year built _____

Base _____ Year built _____

Surface _____ Year built _____

_____ Year built _____

_____ Year built _____

Surface Condition: _____

_____

_____

Pavement Friction _____ Wheel Rut _____ PSI _____

Residency Comments _____

_____

Priority: Residency _____ District _____ Est. Cost _____

District Comments: _____

_____

For Central Office Use:

Field Reviewed by: _____ Date _____ Priority _____

Comments _____

_____

_____

Recommendation: _____

Actual Begin _____ Actual End _____

Gaps _____

F.D. Repair Type _____ Amt. _____ $ _____ Mill/Scarity $ _____

Adjust Manholes _____ $ _____ Sprinkle Treat $ _____

Surface Preparation Type _____ $ _____

Bridge Painting Cost Estimate Res. _____

Bridge No. _____ a _____' x _____' _____

with _____ _____' x _____' _____ Approach Spans

carrying _____ over _____

and located _____ mi. _____ from _____

CLEANING & PAINTING	Square Feet	$/Sq.Ft.	Cost
Superstructure _____		--------	----
Handrails _____		--------	----
Other (describe) _____		--------	----
Total			

Comment: Present paint system on superstructure, handrails and other surfaces is (red lead) (zinc silicate) (other) _____

POLLUTION CONTROL	Square Feet	$/Sq.Ft.	Cost
Special containment (water quality critical)	-----		----
White silica sand (air quality critical)_____	-----		----
Regular containment _____	-----		----
None (little chance of significant pollution)	-----		----
Total			
TRAFFIC CONTROL Total			

Comment: Special conditions, special provisions needed, recommended ties to other bridges, etc. _____

_____

Residency Priority _____ of _____ District Priority _____ of _____ Contract let on _____, 198___ to _____

	Cost Record		
	Estimate	Actual	$/Sq.Ft.
Cleaning & Painting			
Pollution Control			
Traffic Control			
Total			

PAINT ESTIMATING WORK SHEET

Bridge No._____, a_____'X____'_____

with_____'X____'_____ Approach Spans

Member				Total	Sq.Ft./	Total
Description	Size & Shape	Length	No.	Lin. Ft.	Lin. Ft.	Sq.Ft.
SUPERSTRUCTURE						
Stringers						
Floorbeams or Diaphrams						
Girders						
Lower Lateral Bracing						
					Sub-total	
					Add-on for Miscellaneous (0-10%)	%
					SUPERSTRUCTURE TOTAL	
HANDRAIL						
Posts						
Rail						
					Sub-total	
					Add-on for Miscellaneous (0- 5%)	%
					HANDRAIL TOTAL	
OTHER						
					OTHER TOTAL	

Projects = JT & Crack Sealing, Fog Seal,
Slurry Seal, AC Rec., Shldr.,
Bridge Repair, Subdrain