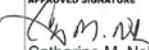

1R PROGRAM

April 2015

1R Technical Bulletin

OREGON DEPARTMENT OF TRANSPORTATION TECHNICAL SERVICES				
Technical Services BULLETIN				
SUBJECT 1R Program	FINAL NUMBER TSB09-01(B)	EFFECTIVE DATE 02/01/2009	VALIDATION DATE	SUPERSEDES or RESCINDS NEW
	WEB LINK(S) http://egov.oregon.gov/ODOT/HWY/TECHSERV/techguidance.shtml			
TOPIC/PROGRAM Highway Design Manual	APPROVED SIGNATURE  Catherine M. Nelson, P.E. Technical Services Manager/Chief Engineer			

PURPOSE

The 1R standard will apply to Preservation projects that are limited to a single lift non-structural overlay or inlay.

GUIDANCE

The ODOT 1R project standard will apply to Preservation projects that are limited to a single lift non-structural overlay or inlay. The 1R preservation program will address the pavement feature only. If in addressing this feature there is an adverse impact on a safety feature, then that impact would be mitigated to maintain status quo within the project, for example, raising a guardrail to accommodate an overlay. The intent is to address the pavement condition but not decrease the functionality of any existing safety feature, even if it is not at the current standard. When the safety feature programs are developed they will be looking at opportunities within the STIP to add funding to projects to address high priority safety features or create stand alone projects, as needed.

DEFINITIONS

Non-Structural Overlay or Inlay – A single lift overlay or inlay

BACKGROUND

ODOT has reached a tentative agreement on 1R standards with FHWA defined by a single lift non-structural overlay or inlay surface treatment.

Historically ODOT's Preservation program has focused on optimizing surface preservation treatments for the entire system of roads within ODOT's responsibility and addressing key safety features within the roadway corridors. The Pavement Management System is used to identify required annual mileage and pavement treatments necessary to achieve system targets of "Percent Fair or Better Pavement Conditions". Once a preservation project has been identified, all safety features within the project limits are inventoried and reviewed against the required 3R standards. Improvements are made where possible or exceptions requested where they are not achievable.

1R Program

- ◆ Two Failed Attempts to Create a 1R Program
- ◆ Statewide Inventory of Traffic Barriers completed in 2008
 - ◆ 2,207 Miles of Traffic Barriers
 - ◆ 143 Miles in Poor Condition Pre-230 Traffic Barriers (6.5%)
 - ◆ 27,842 Guardrail Terminals
 - ◆ 13,308 in Poor Condition Pre-230 Guardrail Terminals (47.8%)
 - ◆ For the First Time !! Prioritized the 11 Non-Standard Traffic Barrier Features
 - ◆ Selected to upgrade Top Seven – Pre-230 Features
 - ◆ \$76 million to upgrade Pre-230 Traffic Barriers & Guardrail Terminals
- ◆ \$6 M 1R Safety Fund to upgrade Pre-230 Traffic Barriers

1R Program

- ◆ Pave Mainly
- ◆ Single-Lift, Non-Structural Overlay or Inlay
- ◆ No Significant Safety Issues
- ◆ Can't Make Any Safety Features Worse
- ◆ Use a Statewide Asset Management Approach to Strategically upgrade Pre-230 Traffic Barriers
- ◆ 1R Roadside Inventories to be Completed – Agreement by ODOT Director and FHWA Division Administrator

1R Program

Pave Mainly

- ◆ Single Lift Non-Structural Overlay
- ◆ Single Lift Non-Structural Inlay
- ◆ Inlay & Overlay OK with a Design Exception
- ◆ Multiple Inlays or Overlays based on Lane Miles OK up to 5%
- ◆ Multiple Inlays or Overlays based on Lane Miles OK up to 25% with a Design Exception

1R Program

1R Roadside Inventory

Two Purposes for 1R Roadside Inventory -

- ◆ Used to make the Safety Decision whether the project should be 1R or 3R
- ◆ Used to Maintain Data in Asset Inventories needed for a Statewide Asset Management Approach to Strategic Decision Making

1R Program

Cathy Nelson's November 24, 2009 Memo

- ◆ Approval of 1R Projects: Region Roadway, Pavement Services and FHWA
- ◆ Tracking of 1R Projects - Roadway Engineering
- ◆ Roadside Inventories – using FACS-STIP Tool
- ◆ 1R Project Shall Only Address Paving and Impacted Features – unless other funds used
- ◆ E&C limited to 20 percent

1R Program

Steve Lindland's May 27, 2010 Email

- ◆ HLT Mandated the Use of the FACS-STIP Tool for 1R Roadside Inventories
- ◆ Identify New or Revised Data with **RED** Font or **YELLOW** Infill
- ◆ Upload and Store Excel 1R Inventory files using the FACS-STIP Tool. Auto Emails Sent to Asset Management Section and Roadway Engineering

1R Project Tracking Spreadsheet

1R PROJECTS - FY 2012 - 2015

Region	Project Name	Key No.	Route No.	Hwy No.	Begin MP	End MP	Year Contracted	1R Inventory	Safety Assessment	Roadway Approval	Pavement Approval	Child Project to address ADA?	Date 1R Construction Completed	Date Child Project Completed
1	US26: Sylvan to I-405 (Portland)	16141	US26	47	71.53	73.94	2012	X		X	X	no		
	US26: SE Cherryville Dr to Salmon River	17482	US26	026	32.49	37.20	2012	X		X	X	no		
	OR99E: 10th Street - MP 14.0 (Oregon City)	17486	OR99E	091	12.20	14.00	2012	X		X	X	no		
	I-205: SE 82nd Drive - SE Johnson Creek Blvd	16847	I-205	64	13.45	16.05	2012	X		X	X	no		
	OR35: Cooper Spur Rd - Neal Creek Rd	16153	OR35	26	84.96	91.55	2012	X		X	X	no		
	FFO - I-84 MLK Blvd to I-205	16267	I-84	002	0.40	5.60	2012	5/24/2012		X	X	no		
	OR217: Sunset Hwy - TV Hwy	17109	OR217	144	0.00	1.47	2012	X		X	X	no		
	OR217: TV Hwy - I5	16252	OR217	144	1.47	7.52	2012			X	X	no		
	US30: McNamee Rd MP17.93	17566	US30	092	13.12	17.93	2012	X	X	X	X	no		
	OR99W: Tualatin River Bridge-Sherwood	17567	OR99W	01W	12.03	16.67	2013	X		X	X	no		
	US26: SE 111th to SE 176th	15051	US26	026	6.84	9.96	2013	X		X	X	no		
	US26: MP 42.2 - 57.45	13717	US26	026	42.20	57.45	2013	X	X	X	X	no		
	OR213: Mulino Road - Blackman's Corner	18696	OR213	160	11.00	16.10	2014	5/6/2014	X	5/22/2014	5/28/2014	no		
	OR213 (82nd Ave): King Rd - Mt Scott Creek Bridge	17568	OR213	160	8.20	9.64	2014		X	6/23/2014	6/24/2014	yes		
	I-5: Marquam Bridge - Capitol Highway	18379	I-5	001	294.21	299.93	2014		X	6/25/2014	6/26/2014	no		
	I-84: Cascade Locks - Hood River	15562	I-84	002	46.09	64.96	2015	7/2/2014	X	5/27/2014	5/28/2014	no		
	OR99E: Berg Parkway - 2nd St (Aurora)	18773	OR99E	01E	21.86	24.97	2015					no		
	OR99E: SE Harold St - SE Harrison St	18776	OR99E	01E	3.07	5.72	2015					no		
	OR213: SE Lindy St - SE King Rd	18779	OR213	160	7.41	8.23	2017					no		
	US30: NW McNamee Rd - NW Bridge Ave	18778	US30	092	7.32	13.03	2016	8/15/2014				no		
2	US30: Columbia City - Jones Rd	17480	US30	092	31.72	37.25	Shelf			X	X	no		
	US26: Wolf Creek - Hayward Rd	17481	US26	047	37.41	47.60	Shelf			X	X	no		
	OR58: Kitson Ridge to Eagle Creek	18381	OR58	18	37.30	48.40				X	X	no		
	US101: OR126 Junction to Douglas County Line	19103	US101	9	190.22	198.58				7/16/2014	7/14/2014	no		
	OR22: MP 25.9 - Little Sweden	17820	OR22	162	25.90	38.50				7/16/2014	5/28/2014	yes		
	US101: Wheeler - Wilson River	17809	US101	9				5/12/2014				yes		
	R2 High Volume Chip Seal	19052	Various							8/25/2014	8/14/2014			
3	Tugman to Spinreel	16199	101	009	216.95	224.40	2012	X				no		
	OR 99: Creel Road - Cor Bridge	15008	99		15.38	17.77	2012					no		
	I-5: Azalea - Canyonville Section	17990	I-5	001	97.91	87.36	2012	X		X	X	no		
	I-5: Rock Point - Seven Oaks	18146	I-5	001	36.58	43.09	2013	X		X	X	no		
	I-5: Evans Creek - Rock Point	18232	I-5	001	43.09	49.07	2014	X		X	X	no		
	US199: Slate Creek - Cave Junction	18094	US199	025	14.20	29.30	2014	X		X	X	yes		
	US101: Johnson Cr - Mc Timmons Ln Paving	17474	101	009	275.72	280.50	2015	X	X	X		no		
	OR42: County Line Curves Ph 1 (Remote - Slate)	13787	OR42	35	38.20	45.90	2014	X	X	X		no		
	OR42S: Low Volume Road Paving	19045	OR42							4/11/2014	4/15/2014	no		
	4	OR 39: 6th St(Autin Ave) - Merrill Lakeview Jct	17936	OR39	020	2.45	5.70	2013	X		X	X	no	
OR140: Lakeshore Drive - Klamath County Boat		18148	OR140	270	57.04	61.74	2013	X		X	X	no		
US97: OR58 - Jct - Chemult Passing Lanes		17548	US97	004	194.65	200.30	2012	X		X	X	no		
I84: Arlington - Tower Rd.		18230	I-84	002	138.04	159.30	2014	X		X	X	no		
South Central Oregon Chip Seal		19044	Various				2014					no		
US20 Chip Seal		18458	US20	007	12.44	48.00	2014	X				no		
I84: Celilo - Rufus		18229	I84	002	95.80	110.46		X		10/7/2014	10/1/2014	no		
5	I-84: N Fork Jacobsen Gulch - Idaho St Line (Ph 1	16022	I-84	006	368.16	377.92	2012	X		X	X	no		
	I-84: Ladd Canyon - N. Powder	?	I-84	006	270.00	285.33	2013	??				no		
	I-84: Nelson Point - Lime	?	I-84	006	331.10	342.00	2014					no		
	US395: US 730 - SE 4th	?	US 395	054	0.04	6.03	2016					no		

1R Program – 2014

- ◆ 1R Program Almost Terminated
- ◆ Chief Engineer Intervention
- ◆ PDLT Involvement
- ◆ New Agreement with FHWA
- ◆ 1R Program Tech Bulletin Jan 2014

1R Requirements for ADA

ADA Curb Ramps

- ◆ US DOJ & US DOT Technical Assistance on Title II of the ADA Requirements for Highway Resurfacing
- ◆ ADA Curb Ramps Need to be Installed When Needed and Existing Ramps Need to be Upgraded if they don't meet the 1991 ADA Standards for Resurfacing Alterations
- ◆ Resurfacing Alterations – Addition of a new layer of Asphalt, Thin Lift Overlays, Inlays, Reconstruction, Cape Seals and Concrete Pavement Reconstruction
- ◆ 1991 ADA Standards – Eight New ADA Data Fields

1R Requirements for Scoping

- ◆ Roadside Inventory must be downloaded from the FACS-STIP Tool
- ◆ Pre-230 Traffic Barriers must be identified
- ◆ ADA Ramps must be install or upgraded if they do not meet the 1991 ADA Standards
- ◆ ADA Inventory must be done with the 8 new data fields
- ◆ The 1R project must be driven to note any obvious safety issues
- ◆ A 1R Safety Assessment must be done and signed
- ◆ 1R Approval Form must be signed and submitted

1R Requirements for Project Initiation

- ◆ 1R Roadside Inventory must be completed
- ◆ Culverts are no longer required in the 1R Inventory
- ◆ ADA Ramps must be installed or updated as a part of FY 14 1R Projects
- ◆ FY 14 1R Projects may install or upgrade ADA Ramps in a “child” project 1 year within project completion
- ◆ A 1R Safety Assessment must be reviewed & updated

1R Program – What's Coming in 2015

1R GPS Mobile Apps

The diagram illustrates the software interface of a Trimble Geo7X handheld GPS device. The device is shown on the left, with a callout pointing to a 'GPS Cursor' on the screen. The interface is divided into three sections:

- Main Tools:** Includes icons for Open Map, Save Map, Add Layers, Table of Contents, GPS Active, Refresh, and Help.
- Browse Tools:** Includes icons for Zoom In, Zoom Full Extent, Previous Extent, Identity, Find Features, and Clear Selected Feature.
- Drawing Tools:** Includes icons for Start/Stop Editing, Select Feature, Draw Features Menu, GPS Collection Tools, Feature Editing, and Offset Point.

Tip: GPS Cursor with red triangle hat is oriented in the direction of North. If this symbol does not have a X-symbol then GPS is active

Geo Tech Process

1R Program – What's Coming in 2015

1R GPS Mobile Apps

Training May 11th – 14th

The image displays four sequential screenshots of the 'Barrier Begin Point' mobile application interface, showing the data entry process for a barrier. Each screen has a title bar with a diamond icon and the text 'Barrier Begin Point' and a close button (X). The bottom of each screen features 'ok' and 'X' buttons.

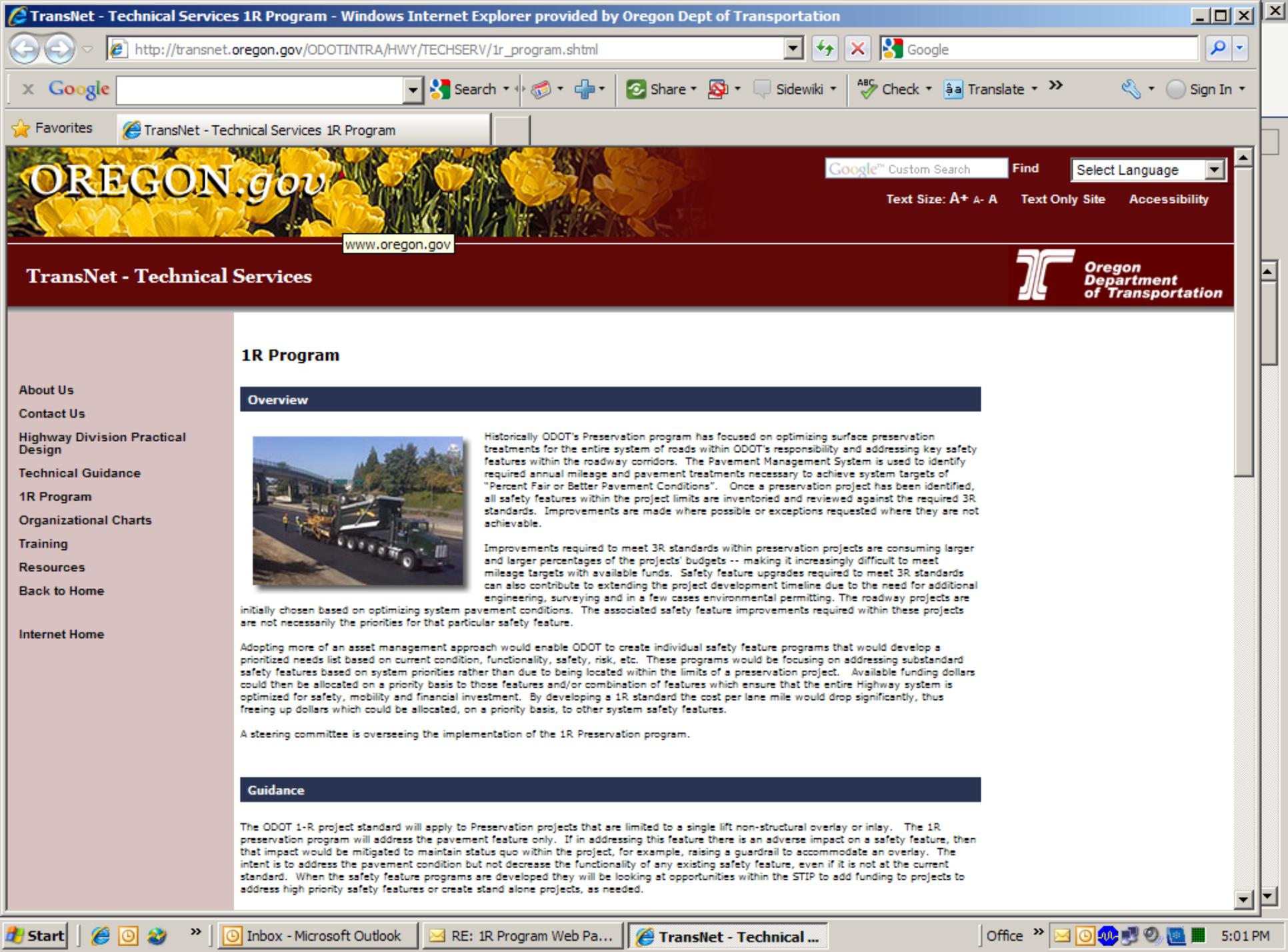
- Screen 1:** Shows the 'Location' tab. Fields include Highway # (001), Hwy Suffix (00), Roadway ID (1), Mileage Type (0), Overlap Code (0), Start MP, End MP, and Position (Left).
- Screen 2:** Shows the 'Terminal' tab. Fields include Tmnl Type (Blunt C), Tmnl Height (Low), Tmnl Cond (Fair), and Shared Tmnl (No).
- Screen 3:** Shows the 'Barrier' tab. Fields include Barr Type (Concrete Barrier), Barr Desc (SS), Barr Height (Low), Barr Cond (Fair), Conc Cnst Typ (Cast in Place), Conc Conn (6 Pin and Loop), Post Space (<Null>), and Post Type (<Null>).
- Screen 4:** Shows the 'Notes' tab. It includes a 'Notes' text area, an 'Inv Comment' text area, a 'Verify Existing Data' button, and a 'Last Inv Year' field (2014).

1R Program – What's Coming in 2015

Tech Bulletin - ADA Curb Ramps
“may” be deferred up to two years

1R Program – What's Coming in 2015

????



TransNet - Technical Services



1R Program

Overview



Historically ODOT's Preservation program has focused on optimizing surface preservation treatments for the entire system of roads within ODOT's responsibility and addressing key safety features within the roadway corridors. The Pavement Management System is used to identify required annual mileage and pavement treatments necessary to achieve system targets of "Percent Fair or Better Pavement Conditions". Once a preservation project has been identified, all safety features within the project limits are inventoried and reviewed against the required 3R standards. Improvements are made where possible or exceptions requested where they are not achievable.

Improvements required to meet 3R standards within preservation projects are consuming larger and larger percentages of the projects' budgets -- making it increasingly difficult to meet mileage targets with available funds. Safety feature upgrades required to meet 3R standards can also contribute to extending the project development timeline due to the need for additional engineering, surveying and in a few cases environmental permitting. The roadway projects are

initially chosen based on optimizing system pavement conditions. The associated safety feature improvements required within these projects are not necessarily the priorities for that particular safety feature.

Adopting more of an asset management approach would enable ODOT to create individual safety feature programs that would develop a prioritized needs list based on current condition, functionality, safety, risk, etc. These programs would be focusing on addressing substandard safety features based on system priorities rather than due to being located within the limits of a preservation project. Available funding dollars could then be allocated on a priority basis to those features and/or combination of features which ensure that the entire Highway system is optimized for safety, mobility and financial investment. By developing a 1R standard the cost per lane mile would drop significantly, thus freeing up dollars which could be allocated, on a priority basis, to other system safety features.

A steering committee is overseeing the implementation of the 1R Preservation program.

Guidance

The ODOT 1-R project standard will apply to Preservation projects that are limited to a single lift non-structural overlay or inlay. The 1R preservation program will address the pavement feature only. If in addressing this feature there is an adverse impact on a safety feature, then that impact would be mitigated to maintain status quo within the project, for example, raising a guardrail to accommodate an overlay. The intent is to address the pavement condition but not decrease the functionality of any existing safety feature, even if it is not at the current standard. When the safety feature programs are developed they will be looking at opportunities within the STIP to add funding to projects to address high priority safety features or create stand alone projects, as needed.

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1R Program Web Page

http://transnet.oregon.gov/ODOTINTRA/HWY/TECHSERV/1r_program.shtml

1R-3R-4R Roadside Inventories

- ◆ 1967 – Yellow Book states “guardrail , , , must be attached securely to the structure”
- ◆ 1974 – Yellow Book states “untreated end , , , of a barrier is one of the more formidable roadside obstacles”
- ◆ 1981 – NCHRP Report 230
- ◆ 1994 – FHWA states “Reviews and reports from the field show that some obsolete roadside hardware or poor practices thought to have been upgraded or eliminated as a result of the ‘Yellow Book’ safety reviews of a generation ago, still remain on the Nation’s main roadway systems”
- ◆ 1994 – FHWA states “after 20 years, we believe there should be no blunt ends on the leading edge of corrugated steel beam guardrail”
- ◆ 1994 – FHWA states “any BCT installed without the specified flare should be replaced in conjunction with regularly scheduled roadway work”
- ◆ 1994 FHWA Action – “replace any such blunt ends with crashworthy terminals , , , within 2 years from the date of this memorandum”
- ◆ 1994 FHWA Action – “any remaining unconnected bridge approach guardrail , , , should be connected by an acceptable transition design , , , within 3 years from the date of this memorandum”
- ◆ 1998 – NCHRP Report 350
- ◆ 1998 – FHWA states “Breakaway Cable Terminals (BCT’s) should now be replaced with end treatments meeting NCHRP 350 criteria in conjunction with 3R work”
- ◆ 2008 – 13,308 Pre-230 Guardrail Terminals and Bridge Transitions