

Pavement Management Office

PAVEMENT PRESERVATION

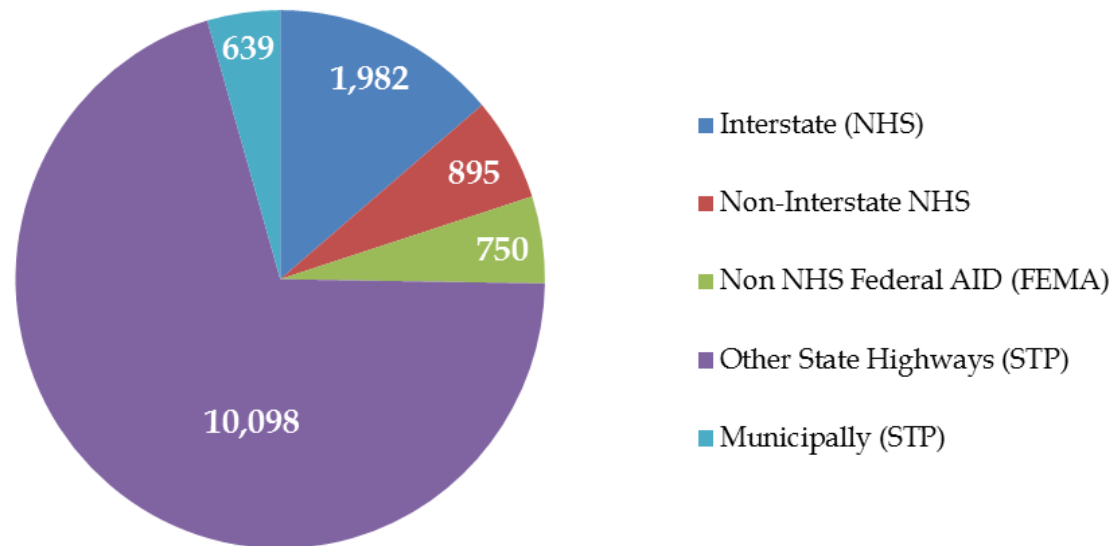
SEPPP

GOALS AND OBJECTIVES

- PRHTA has been collecting data for more than twenty (20) years with specialize equipments.
- The Pavement Management Office is restructuring with the purpose of better management of our network and complies with MAP-21.
- The office must be able to provide a systematic and consistent method for selecting maintenance (preservation methods) and management needs, determining priorities and the optimal time of repair by predicting future pavement condition.

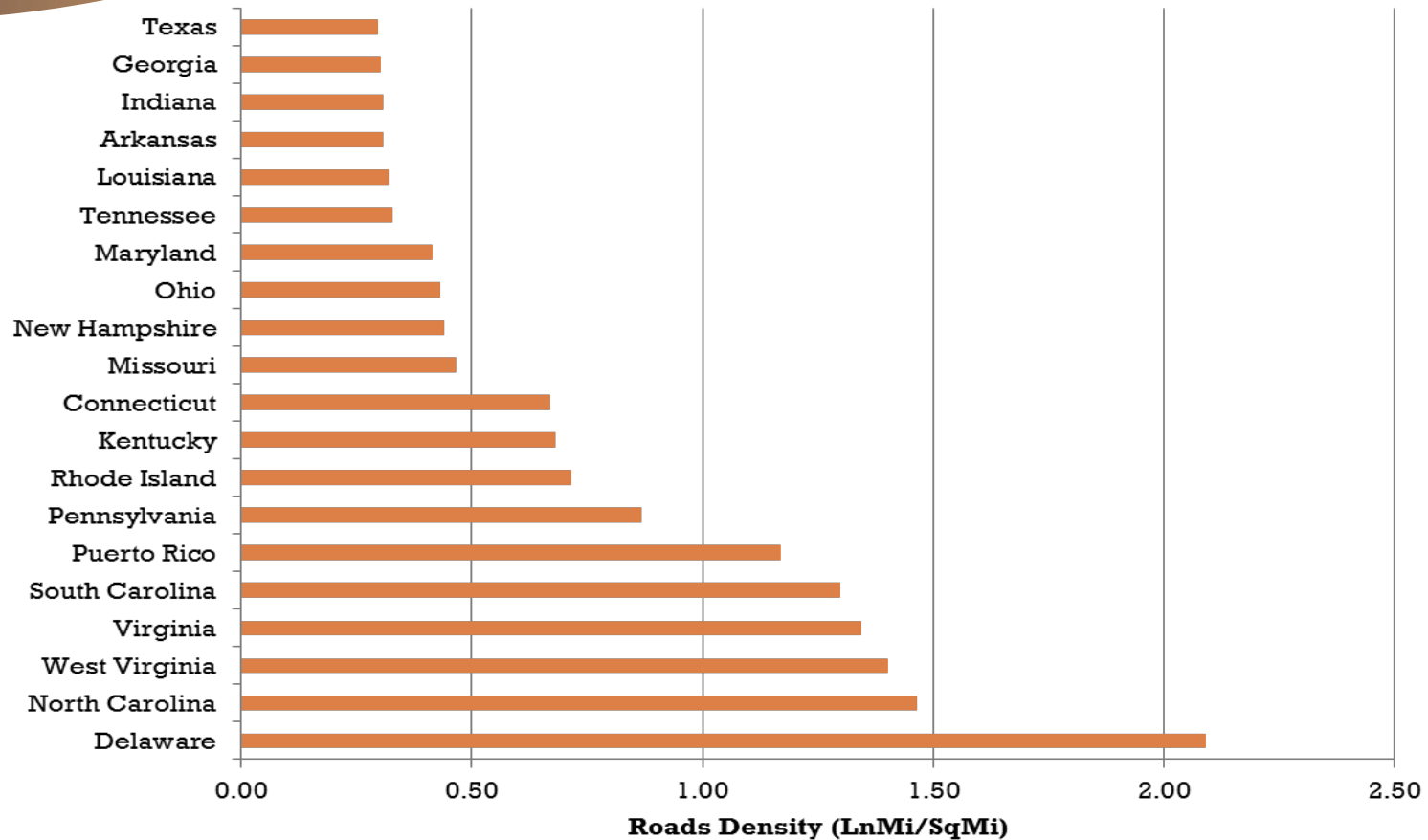
NETWORK DEFINITION

- The NHS in Puerto Rico consists of 27 highways and 716 centerline kilometers. One NHS highway is maintained by a PPP (Public Private Partnership) and PRHTA's network includes numerous roadways that are not on the NHS. In total, PRHTA maintains 13,726 lane kilometers of pavement in the State Highway System.



ROADS DENSITY (LINEAR MILES BY AREA)

ROADS DENSITY BY STATES



District of Columbia - 20.38 (LnMi/SqMi)

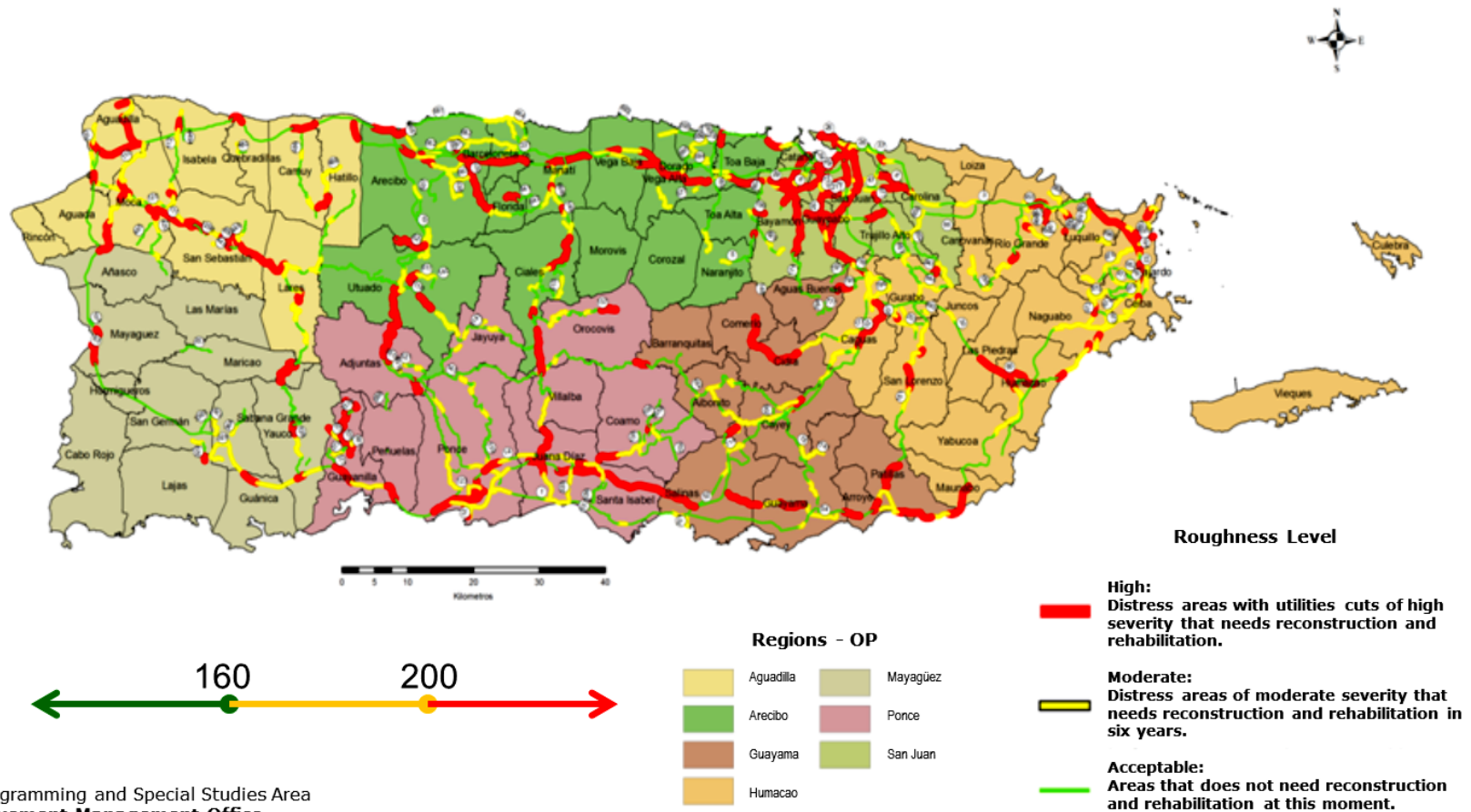
GIS/LRS INTEGRATION



Government of Puerto Rico
Department of Transportation and Public Works
HIGHWAY AND TRANSPORTATION AUTHORITY



ROAD CONDITION 2009



Programming and Special Studies Area
Pavement Management Office



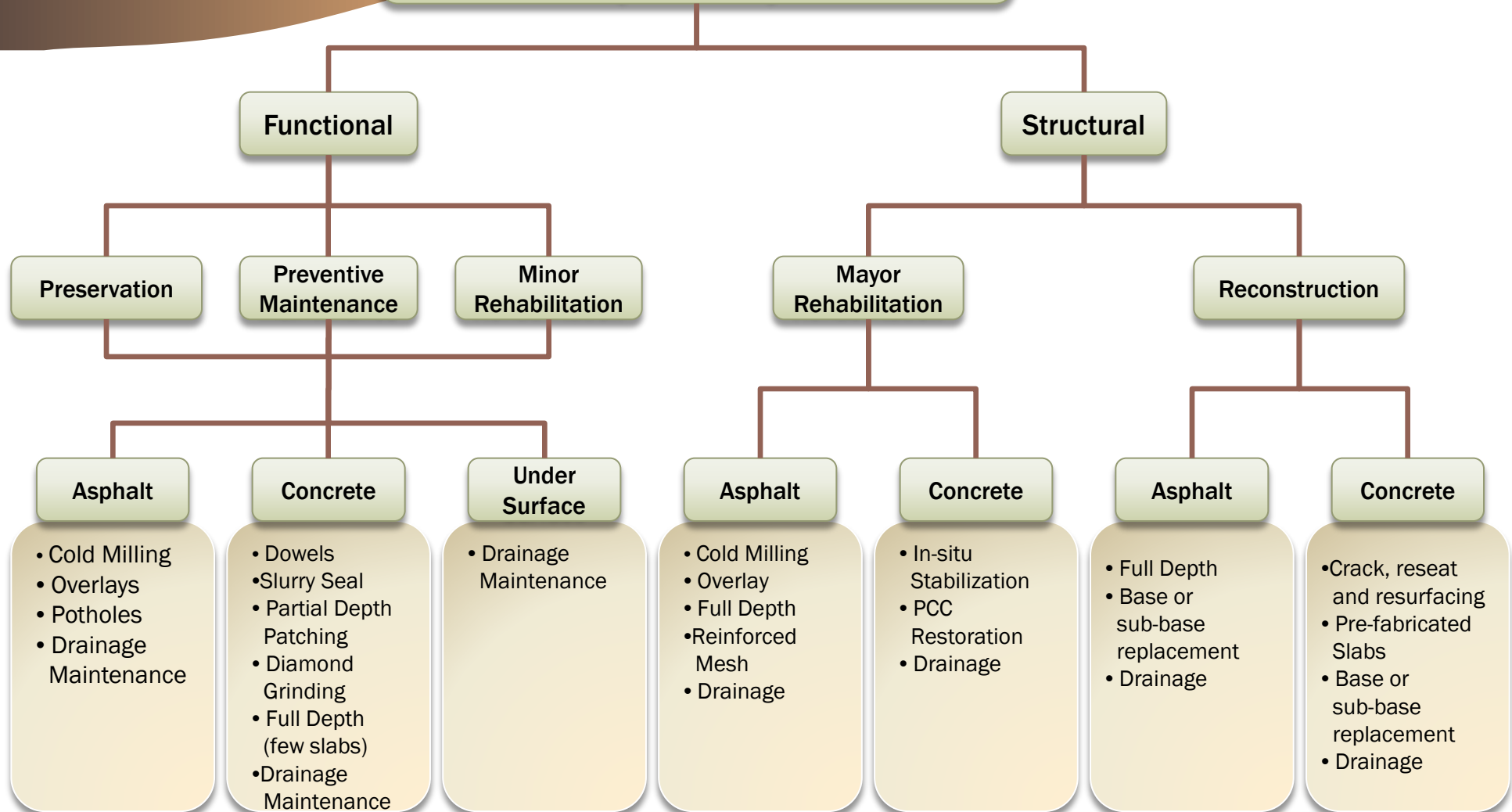
COMMONWEALTH OF
PUERTO RICO

Highway and Transportation Authority



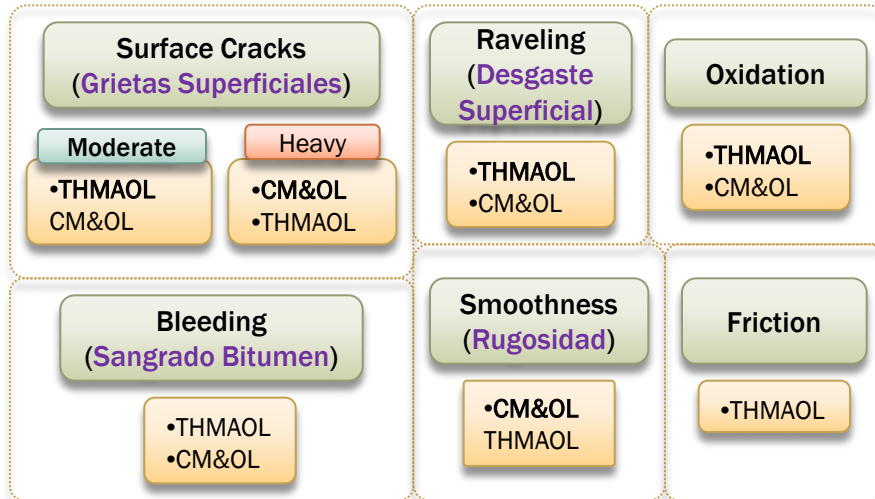
AVAILABLE TREATMENTS

Typical Pavement Treatments (Toolbox)



CURRENT PAVEMENT PRESERVATION TREATMENTS (PRHTA)

ASPHALT



•THMAOL = Thin HMA Overlay (Recubrimiento Delgado)
 •CM&OL = Cold Milling & Overlay (Escarificación y Recubrimiento)

Legend:

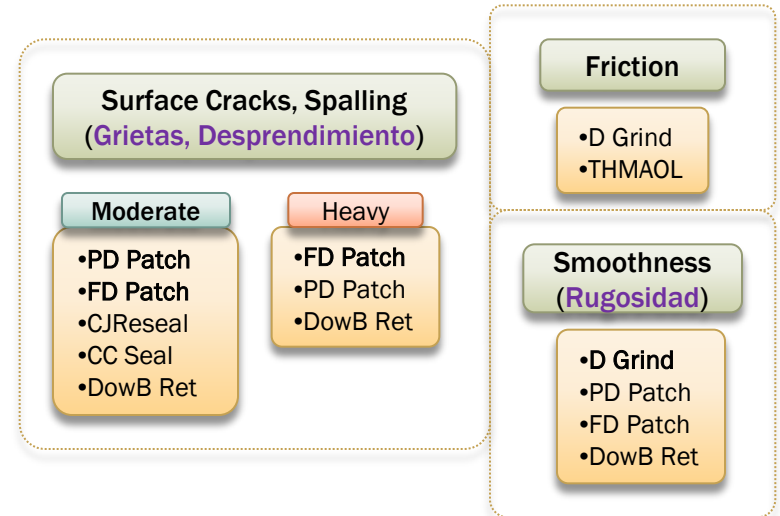
Distress

Severity Level

•Extensive Used Treatment
 •Moderate Used Treatment

•Acronym = Name of
 Preservation Treatment
 (Spanish Translation)

CONCRETE



•CJReseal = Concrete Joint Resealing (Re-sellado de juntas)
 •CC Seal = Concrete Crack Sealing (Sellado de grietas)
 •D Grind = Diamond Grinding (Corte con Diamante)
 •PD Patch = Partial Depth Patching (Parcho a Profundidad Parcial)
 •FD Patch = Full Depth Patching (Parcho a Profundidad Completa)
 •DowB Ret = Dowel Bar Retrofitting (Varillas de Transferencia de Carga)
 •THMAOL = Thin HMA Overlay (Recubrimiento Delgado)

NEW TREATMENTS OR TECHNOLOGY ALREADY USED IN PR:

New Pavement Technologies:

- Asphalt Rubber – PR-10 Ponce, PR-184 Cayey
- Warm Mix Asphalt (EDC: WMA) – PR-2 South
- Paving Structural Geogrid – PR-30 Juncos, PR-2 South
- Full Depth Reclamation (FDR) – PR-7707
- Roller Compacted Concrete (RCC) – PR-1 (AMA Lane)
- High Friction Surface Treatment (EDC2: HFST)

New PMS Technologies and equipment:

- Pavement Management System Software: DTims by Deighton
- PathRunner by PathWay



COMMONWEALTH OF
PUERTO RICO

Highway and Transportation Authority



FUTURE PAVEMENT PRESERVATION TREATMENTS

ASPHALT

CONCRETE

Surface Cracks (Grietas Superficiales)

Light

- Fill/Seal
- Micro Su
- Chip S
- UtBWC
- THMAOL
- CM&OL
- UtHMAOL
- HipRecyc
- Slurry S
- CipRecyc
- Ut Whitet
- Prof Mill

Moderate

- Chip S
- THMAOL
- CM&OL
- CipRecyc
- Fill/Seal
- Micro Su
- UtBWC
- UtHMAOL
- HipRecyc
- Ut Whitet

Heavy

- CIP Recyc
- HipRecyc
- CM&OL

Raveling (Desgaste Superficial)

- Slurry S
- THMAOL
- CM&OL
- Micro Su
- Chip S
- UtBWC
- UtHMAOL
- HipRecyc

Oxidation

- Slurry S
- Chip S
- Micro Su
- UtBWC
- THMAOL
- CM&OL
- UtHMAOL
- HipRecyc

Smoothness (Rugosidad)

- THMAOL
- CM&OL
- Prof Mill
- Micro Su
- UtBWC
- UtHMAOL
- Hip Recyc
- Cip Recyc
- UtWhitet

Friction

- UtBWC
- Micro Su
- Chip S
- THMAOL
- CM&OL
- UtHMAOL
- HipRecyc
- Prof Mill

Bleeding (sangrado bitumen)

- THMAOL
- CM&OL
- UtHMAOL

- Fill/Seal** = Crack Filling/Sealing (Llenado/Sellado de Grietas)
- Slurry S** = Slurry Seal (Sellado Superficial)
- Micro Su** = Micro Surfacing (Micro Recubrimiento)
- Chip S** = Chip Seal Coat (Sellado con Agregados)
- UtBWC** = Ultra-thin Bonded Wearing Coarse (Capa Anti-desgaste Ultra-delgada)
- THMAOL** = Thin HMA Overlay (Recubrimiento Delgado)
- CM&OL** = Cold Milling & Overlay (Escarificación y Recubrimiento)
- UtHMAOL** = Ultra-thin HMA Overlay (Recubrimiento Ultra-Delgado)
- HipRecyc** = Hot in-place Recycling (Reciclaje Caliente en Sitio)
- CipRecyc** = Cold in-place Recycling (Reciclaje Frio en Sitio)
- Prof Mill** = Profile Milling (Escarificación de Perfil)
- UtWhitet** = Ultra-thin Whitetopping (Capa Blanca Ultra-delgada)

Surface Cracks, Spalling (Grietas, Desprendimiento)

Light

- CJReseal
- CC Seal
- PD Patch
- UtBWC
- THMAOL

Heavy

- FD Patch
- PD Patch
- DowB Ret

Moderate

- PD Patch
- FD Patch
- CJReseal
- CC Seal
- DowB Ret
- UtBWC
- THMAOL

Friction

- D Groov
- D Grind
- UtBWC
- THMAOL

Noise (Ruido)

- D Grind

Smoothness (Rugosidad)

- D Grind
- UtBWC
- D Groov
- PD Patch
- FD Patch
- DowB Ret
- THMAOL

- CJReseal** = Concrete Joint Resealing (Re-sellado de juntas)
- CC Seal** = Concrete Crack Sealing (Sellado de grietas)
- D Grind** = Diamond Grinding (Corte con Diamante)
- D Groov** = Diamond Grooving (Ranurado con Diamante)
- PD Patch** = Partial Depth Patching (Parcho a Profundidad Parcial)
- FD Patch** = Full Depth Patching (Parcho a Profundidad Completa)
- DowB Ret** = Dowel Bar Retrofitting (Varillas de Transferencia de Carga)
- UtBWC** = Ultra-thin Bonded Wearing Coarse (Capa Anti-desgaste Ultra-delgada)
- THMAO** = Thin HMA Overlay (Recubrimiento Delgado)

Legend:

Distress

Severity Level

- Extensive Used Treatment**
- Moderate Used Treatment**

•**Acronym** = Name of Preservation Treatment (Spanish Translation)

PAVEMENT MANAGEMENT EQUIPMENT: PRESENT AND FUTURE

Falling Weight Deflectometer



Truck Mounted
Deflectometer



Rolling Wheel
Deflectometer

Profilers



Hi-Lo
Detector



Computerized



Lightweight

High Speed



Pavement Friction Tester



Windows Operating
System, GPS



Continuous Testing,
International Friction
Index (IFI)

