California Chip Seal Association

2013 Pavement Preservation Workshop
San Diego Marriott Mission Valley
COLD RECYCLING

HOW DID WE GET HERE?
OUTLINE

• BRIEF HISTORY OF THE PROCESS
• IMPROVEMENTS TO THE PROCESS
• PRESENT DAY APPLICATIONS
• FUTURE APPLICATIONS
BRIEF HISTORY

• Early applications were limited to low volume roads due to early strength limitations.
• Different types of emulsions and rejuvenators were used – mostly due to regional influences.
• Use of additives such as lime or cement created a better overall product.
• Advent of engineered emulsions and an accepted mix design process were important to the development of the process.
• Process began to be utilized on higher volume roads.
IMPROVEMENTS TO THE PROCESS

• EQUIPMENT
  - ADVENT OF SINGLE UNIT TRAINS

• EMULSIONS
  - USE OF “ENGINEERED EMULSIONS”
  - DEVELOPMENT OF MIX DESIGN PROCESS

• ADDITIVES
  - USE OF LIME OR CEMENT GIVES THE FINISHED PRODUCT HIGHER EARLY STRENGTH
MULTI UNIT CIR TRAIN
MILLING MACHINE
CRUSHER & SCREEN DECK
PUGMILL
SINGLE UNIT CIR TRAIN
CRUSHER
SCREEN DECK
PUGMILL ALL MOUNTED ON ONE UNIT
DEPOSITING RECYCLED MIX DIRECTLY IN PAVER HOPPER

TYPICALLY NOT SPECIFIED IN THE WEST – NEBRASKA DOR, MIDWEST, AND EAST COAST SPECIFY
WHERE ARE WE NOW?

• MANY AGENCIES ARE LOOKING TO INDUSTRY TO DEVELOP LOW VOLUME ROAD SPECS AND COLD CENTRAL PLANT SPECS

• THIS WILL LEAD TO MORE SURFACING CHOICES – CHIP SEAL, SLURRY SEAL, MICROSURFACING, CAPE SEAL, ETC.

• IN CALIFORNIA, MANY COUNTIES AND CITIES HAVE SPECIFIED CIR OR CCPR WITH SOME TYPE OF THIN LIFT SURFACE TREATMENT
WASHOE COUNTY NEVADA
FINISHED PRODUCT READY TO LOAD INTO TRUCKS
WASHOE COUNTY NEVADA
LAYDOWN OPERATION
WASHOE COUNTY NEVADA
LAYDOWN OPERATION
WHERE ARE WE HEADED?

• PROJECTS THAT CIR CAN BE APPLIED WILL CONTINUE TO GROW – HIGHER VOLUME TRAFFIC AREAS AS WELL AS URBAN AREAS – IT IS NO LONGER A LOW VOLUME ROAD, OUT IN THE COUNTRY TYPE OF PROCESS DUE TO INCREASINGLY HIGHER QUALITY END PRODUCT AND EQUIPMENT INNOVATIONS

• WITH FUNDING ISSUES, CIR WITH THIN LIFT SURFACE TREATMENT HAS BECOME AN ATTRACTIVE ALTERNATIVE TO TRADITIONAL TREATMENTS (MILL & FILL, HMA OVERLAY, ETC.)