

# Demographics of Nebraska

- Number of NDOR Employees – 2100 FTE
- Centerline miles of roadway – 9949 Mi.
- Number of Annual Projects – 142 (FY '13)
- Annual Contracted Dollar Work - \$450M - \$500M

## State Bird – Western Meadow Lark



## State Mammal - White-tailed Deer



# Types of In-Place Recycling Used in Nebraska

- Full Depth Reclamation:
  - Cement
  - Fly Ash Stabilized)
- Cold In-Place:
  - with Foamed Asphalt
  - with 1.5% Hydrated Lime Slurry & 1.5% CSS-1
- Hot In-Place Recycling
- All of the above have been let in the last 5 yrs.

# Recycling Projects in the last 5 years

Project Type	Number of Projects	Cost per Station	Total Cost
FDR -Cement Stabilized Bituminous	3	\$7,494	\$14,915,035
FDR -Fly Ash Stabilized Bituminous	15	\$7,939	\$56,458,555
Cold In-Place Recycling w/Foamed Asphalt	3	\$7100	\$9,057,000
Cold In-Place by Hydrated Lime Slurry Stabilization	28	\$7,114	\$92,179,760
Hot In-Place Recycling	13	\$3,179	\$20,560,448

# Why We Choose Each Strategy

1. Full Depth Reclamation by Cement or Fly Ash Stabilized Bituminous.
  - When extreme cracking/stripping and depressed thermal cracks are present.
  - When pavement condition won't support Hydrate Lime Slurry Equipment.
  - When poor subgrade conditions exist.
2. Cold In-Place Recycle w/ Foamed Asphalt
  - When cracking/stripping and depressed thermal cracks are present but not full depth.
  - When the remaining existing pavement beneath the recycling process will support the equipment load.
  - When the project impacts and schedule can support a grade raise or widening.
3. Cold In-Place Recycle by Hydrated Lime Slurry Stabilization
  - When the Truck ADT is less than 200.
  - When the remaining existing pavement beneath the recycling process will support the equipment load.
  - When the project impacts and schedule can support a grade raise or widening.

## 4. Hot In-Place Recycle

Surface needs rejuvenated but structurally sound.

Does not have extensive patching.

Low to moderate traffic volume roadway .

# Why In-Place Recycling Is Not Utilized

1. 4" Mill/Fill strategies that incorporate high RAP percentage (up to 50%) are cost competitive, less sensitive to weather conditions and are structurally similar to recycle.

CIP to 4" \* 0.25 SN=1 plus Overlay 3"\* .44 SN= 1.32 Total SN=2.32

M/F 4"x 0.44 SN= 1.76

2. Project impacts and schedule will not allow a grade raise or widening.
3. Traffic volumes too high for tender recycled surface that is curing.
4. The existing pavement has sufficient structure making additional impacts due to recycling unnecessary.